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SOME PROBLEMS OF THE SMALL HOUSE

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The basic problem of the small house is that of meeting the needs and wants of families as well as possible within their financial resources. The subject is complex, even in a single simple case such as that of providing a house for a family of five or six with an assured income. If the children are small, the family may wish a house designed and built primarily to meet its require nents during the next ten or twelve years, until the children reach maturity. The choice of materials, style of architecture, engineering design, arrangement and size of rooms, and numerous details will involve decisions—conscious or assumed—on hundreds of points, on each of which there may be various practical alternatives.

Collectively, the problems of twenty-odd million families bring in a great many other considerations. The varying incomes, needs, and tastes of individual families, as well as differences in climate and local custom, all play a part. There enter into the scene possibilities of eliminating waste through improved commercial and financial organization of home building; public measures, such as control of subdivision layout, zoning, and building code regulations; education, especially of young people, so that they may be able to make wise decisions; provision of disinterested expert advice to families buying or building homes; the organization of research; and a multitude of other factors.

This paper suggests the relationship of some elements in the design and construction of houses to various other parts of the whole picture.

Since the amount that a family can afford to pay for a house is limited, every detail of the house deserves consideration with respect to the return in service or satisfaction from the expenditure involved.

Stability in the foundation and in the structure is a first requisite in every new house, whatever its size or equipment, provided it is not strictly a temporary affair. Cracks in the woodwork and plaster, doors that stick and jam, and openings that let in rain and snow result inevitably if the foundations settle or if the walls or framework become distorted. The foundation wall itself should be at least eight inches thick if of solid concrete. If of other materials, it may need to be thicker. It should extend in depth below the frost line and have adequate footings whose width will depend upon the bearing value of the local soil. If piers or posts are used instead of foundation walls, corresponding precautions should be taken—and no wooden foundation posts should be used without preservative treatment to ward off decay and attacks by insects.

The walls and framework of the house obviously should be substantial, with all the important parts well tied together. Yet, after severe windstorms, we learn of roofs that merely rested on the top of brick walls, without being anchored by ties to the masonry; frame houses that get out of plumb because they did not have diagonal bracing; and porches and ells that are wrenched loose because they were not tied to the main structure. In regions subject to high winds, frame houses without plaster to add weight and rigidity are in an especially dangerous position, unless they are well anchored to the foundations. The too common sagging roof line is generally a sign of the spreading of side walls due to thrust of the rafters, a condition which might have been avoided by using proper ties. Mistakes in design of interior framework, resulting in unequal shrinkage, often result in distortion of the whole frame and cracks in the plaster.

Diagonal sheathing is recommended as preferable to horizontal, except for stucco houses where it has been found that less cracking of stucco occurs with horizontal sheathing and adequate corner bracing. Eight-inch brick walls should have a row of headers at least every sixth course. Such structural details as are mentioned here are discussed at greater length in "Recommended Minimum Requirements for Small Dwelling Construction" by the Building Code Committee of the Department of Commerce.

Adequate protection from wind, rain, and snow is essential. Nothing adds so much to the expense of keeping up a house or makes it run down so fast as chronic leakage, and for this reason intersecting surfaces of the roof, wall, window openings, and other danger points particularly should be water-tight. Adequate protection against fire is important. In many houses, there is a free passage for air from the cellar to the attic between the studs in the outside walls. This means that a fire starting

in the basement or on the first floor is given every opportunity to spread to the whole house. It also gives cold air from the attic free play to chill the basement and the side walls of rooms, and furnishes rats and mice freedom to move about as they please. The remedy is to insert masonry or some other incombustible material, or 2 x 4 lumber, in these wall spaces at the floor and the top ceiling levels. Chimneys, fireplaces, stoves, furnaces, and stovepipes are frequently the sources of fires. Omission of flue lining and placing of combustible materials against chimneys are faults to be guarded against. Excellent information on such points is contained in Farmer's Bulletin 1230, of the Department of Agriculture, entitled "Chimneys and Fireplaces," which also tells how fireplaces may be equipped to serve as warm air heaters.

In connection with interior wall finish and heat insulation, the home builder has a wide range of choices. In a frame house that is to be sheathed, good waterproof building-paper in the wall is probably the least costly step toward assuring a warm house at reasonable expense. Weather stripping around doors and windows comes next. Insulating materials over the top floor ceiling joists, or under the roof, and in the walls, and storm windows may all be used to advantage. It must be remembered that it is relatively hard to add heat insulating materials in the walls after the house is built, whereas weather stripping, or heat insulation on the attic floor or under the roof can be added at any time. The interior walls may be finished with wood or metal lath and plaster; with plaster board, a composition material that takes the place of lath and of the rough coat of plaster; or with a wall board which can be used without further finish or decorated as desired; or interior walls may be ceiled with matched lumber. Any of these can be surfaced with any of a wide variety of materials.

Adequate floor joists, well-bridged; flooring; millwork, including doors, windows, stairs, and trim, are other elements of the structure. Many parts of the structure require paint or other protective covering, and in many sections of the country precautions are necessary to prevent termites from eating away timbers. Plumbing, lighting, and heating equipment, important elements in the cost of a modern house, should all meet certain minimum standards of materials and workmanship, to whatever extent they are installed.

While the preceding paragraphs deal mainly with items that are essential for a reasonably durable and satisfactory house, it should be noted that they include some reference to items that may be classified as desirable rather than necessary, on the assumption that they can be afforded

in most new houses without sacrificing something else that is needed more. Some qualifications may also be required in connection with houses that are to be used only temporarily, or as summer cottages, or in mild or dry climates.

Before the designer can proceed to work on a house for a particular family, certain questions must have been decided with respect to the family's resources and what it wishes to obtain. The family must come to some conclusion as to how much of its income it can afford to spend for its home. One such question is whether or not it prefers a relatively small lot in a more convenient or desirable neighborhood, to a larger one somewhere else. Furthermore, it may well consider what features of the house might be added later when it may have a larger income, and whether or not it wants to make the house a permanent home. In the case of a permanent home, the location and ample size of the lot are of prime importance, and the designer will make various allowances if he thinks there is likelihood that additions will be made to the house. Very likely 20 per cent of the cost of the completed home goes for the lot, including the street, sidewalk, and utility improvements that serve it.

It must be borne in mind that the problems of an individual owner are transmuted, and appear in different aspects, in the case of houses that are built for sale or rent. Such houses are in the great majority in the larger cities, and the speculative or operative builder anticipates the "demands" of families that buy or rent. The existence of considerable numbers of buyers who are not well informed, and who tend to attach too much importance to details, does not make it easier to sell the house that is sound in fundamentals.

There appears to be a real opportunity for the person of board vision and understanding, who know many families and understands their problems of living, to aid in the development of well-balanced houses and thus help to meet an outstanding need. The determination of what is a well-balanced house inevitably goes back to the wants of the family that lives in it. The term "wants," in the absence of a better one, must be used in a broad sense and with the realization that the character and ideals of a family affect in large degree the importance that they attach to various items in a home. Some of the family's wants may be listed as follows:

(1) Shelter from the elements—excessive heat, cold, dampness, wind, rain, snow. Provision for such protection may involve a number of different parts of the house. In order to be comfortable during hot summer weather, for example, there may be required some form of heat

insulation, good ventilation through adequate provision for air to circulate through the house, and correct orientation with respect to prevailing winds.

(2) Adequate, well-arranged space for carrying on the daily round of family life—sleeping; eating; care of children; study, reading, enjoyment of music; home music and home play; and all other forms of entertainment and social relationships of the family and its friends. Not only the size of rooms, but their number and layout, with respect to privacy, arrangement of furniture, and other factors must, of course, be considered.

(3) Convenience and economy for housekeeping and other routine elements of daily life, including the preparation of meals and cleaning up after them, dusting and cleaning the house, washing and cleaning clothes, sewing and mending, and physical upkeep of the house, etc.

(4) Housing of equipment and personal possessions, including motor cars, clothes, books, furniture, furnishings, works of art, and other items that are specially esteemed, etc.

(5) Satisfaction of artistic tastes and of the desire for attractiveness, order, and neatness. Desire to have in sight or at hand articles that are pleasing because of special qualities such as age, rarity, associations with family or friends or memorable events, things that look new and fresh, or that come from nearby or far away, etc.

(6) Satisfactory location as a basis for activities beyond the home—accessibility to and from places of work, schools, playgrounds, and shopping centers; enjoyment of play, rest, recreation, and fresh air both on the lot and in the neighborhood; accessibility to recreational facilities beyond the neighborhood; availability at reasonable cost of water, sewerage, electricity, telephone, and gas.

Every house that is built is necessarily full of compromises, but there is altogether too much compromise of essentials in favor of showy externals. Practically every such compromise may be traced back, at least in part, to aspirations that are commendable enough in themselves. The trouble is that so many families fail to exercise good judgment in deciding on what will prove most satisfactory in the long run. Under such circumstances, progress requires not only assembling and publishing facts, but broad and sympathetic human understanding.

EDUCATION FOR HOMEMAKING AS A MAN SEES IT[1]

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Any man discussing the subject of this paper with experts in the field of home economics would naturally feel some trepidation. The present author is bulwarked against his disquiet only by the fact that he is the male member of a homemaking partnership which has persisted for many years, that he still has the original partner, and that one tangible result of that relationship is a family of three boys in whose rearing he has had a part. Such experience, to which should be added considerable careful study of the problem, may give a slight measure of authority to the words which follow.

Considered from the point of view of numbers involved, homemaking is the most important vocation in which either mankind or womankind engages. In 1920 in the United States there were 54,000,000 women, 30,000,000 of whom were twenty years old or over. Of these upwards of eighty per cent were married. There were, accordingly, approximately 24,000,000 homes, each one of which had need for a trained homemaker. If it be accepted that every adult woman, married or single, makes of her habitation a home (a fact not true of single men—a bachelor's apartment is rarely a home), it is probably true that the vocation of homemaking commands the attention in some measure of over a quarter of a hundred million individuals. This is more than twice the number engaged in agriculture, the field next largest after homemaking. In scope, then, we face a prodigious challenge.

Certain considerations are basic to any clear discussion of the problem of training homemakers. It must be recognized in the first place that women must be trained not for one vocation but for at least two. Of these, homemaking is the permanent vocation, the other in the overwhelming majority of cases must be considered temporary. There would appear to be a trend toward a less temporary nature of the second vocation, but that trend does not lessen the certainty of the permanency of the first. Any program of vocational education for women which blinks this fact simply fails to face reality.

A second consideration resides in the fact that, increasingly, the modern home is ceasing to be the place in which a girl may learn the art and science

[1] Address before the home economics section of the American Vocational Association, New Orleans, December 6, 1929.

of homemaking. It was but a few decades ago that girls learned through apprenticeship, just as their brothers gained their trades through a similar scheme. But today girls are more often boarders and lodgers than homemakers' assistants. School, as the girl grows older, demands more and more of her time. Social responsibilities, extra-curricular duties impinge upon her free hours until her problem becomes one of finding enough hours in the day to do all that seems legitimately required. Being on time for meals and keeping her own room in order frequently is the sum total of the modern girl's contribution to running the household. If instead of going to school the girl is employed, the problem is not essentially changed. The home is, to all intents and purposes, a family hotel in which she has only a few responsibilities which would be absent from an ordinary hostelry, and these responsibilities are offset by the fact that the mother is far more helpful and sympathetic than any landlady.

Of still greater significance is the fact that with rare exceptions the present generation of mothers is handicapped in attempting to train its daughters for homemaking. These mothers were themselves trained by the apprenticeship method. Child psychology, modern dietetics, thermostatic control of baking, and the many other characteristics of the service of homemaking as it is developing today are not a part of their background. A few mothers have been progressive enough to take evening or afternoon classes in home economics. Others have kept abreast of the times by reading the excellent articles in some of the popular magazines for women. But for most mothers, afternoon classes in home economics have meant another hat in the personal wardrobe, and in their reading they have passed over articles on infant feeding in favor of intimate pictures of European royalty.

What has just been said must not be interpreted as derogatory to mothers. Just keeping the menage going in a wholesome and orderly manner is a complicated problem. To maintain a pervasive spirit which sweetens and makes positive the intimacies of a home is no small order. No wonder there is little time left the homemaker to catch up with modern developments and still less to pass on to her daughters that which has been found helpful and workable.

A third consideration involves the modern conception of the home. No longer do we think of the home as a boarding house existing simply to feed the inmates. Rather do we conceive of it as a place where efficiently functioning physical machines are built. Food ceases to be an end in itself (and do not forget that the eating of food deliciously cooked and

beautifully served is a cardinal delight) and becomes the means to more abundant vigor and health.

No longer do we think of a home as a lodging house in which one sleeps when one is too tired to do anything else. Rather, we conceive it to be a place for complete relaxation, rest, and recuperation. Coloring of walls, arrangement of furniture, choice of bedding, all contribute to the one end that home shall be the place where tiredness flees, worries vanish, troubles cease. Herein quite frequently lies the difference between a house and a home.

No longer do we think of a home as a place where punishment is administered for wrong-doing. Rather, we vision it as a place where children are so trained as to be bulwarked against wrong-doing. All evidence points to the ineffectual home as the source of juvenile delinquency, to inept or quarrelsome or separated parents as prime factors in wrecked childhood. The modern home emphasizes preparation for right living rather than punishment for wrong-doing.

No longer do we think of the home as an enterprise managed by one individual, the mother, for the benefit of the rest. Rather, we see the enterprise as a partnership in which every member of the household has a responsibility as well as a benefit. The chief homemaker is the chairman of the board, the executive officer of the firm, but the real success or failure of the venture depends upon whether or not each person concerned contributes his share and discharges his responsibility.

The home is not an institution to be improved by society. It is the one institution which more than any other can itself improve society. As the majority of the homes in the community do and think, so will the community do and think. To the extent that homes fail in their high obligations, the communities will likewise fail. It is with this conception of the home that we must attack this problem of training homemakers.

At this point it seems appropriate to distinguish between home economics education and training for homemaking, for it is with the latter that this paper deals. The writer conceives home economics to be a part of general education—cultural in the best sense of the term, rather than vocational. Most frequently it is in terms of cooking and sewing, or, if the reader prefers, foods and textiles. Too often it is taught by immaculately-garbed but inexperienced and immature women whose contact with actual homemaking is still a matter of future experience. Always, except in part-time continuation classes, it is dealing with girls whose thoughts and actual entrance upon the vocation of homemaking are far removed in point of time from the training that is being given. At her best the intel-

ligent teacher of home economics is always seeking to create a point of view, an attitude of mind toward a future vocation which, for nine-tenths of the girls enrolled, is certain. In some aspects the approach may be immediate, as in such cases as purchase and construction of wearing apparel or the working out of a satisfactory diet for the average adolescent girl. But in the main the resultant must be an appreciation on the part of the girl of the fascinating complexity of homemaking, such that she will be impelled when the opportune time arrives to enter wholeheartedly into a program of vocational homemaking education. She must gain a respect for the chemistry of cooking, for the psychology of child-rearing and intimate human relations, for the subtlety and tact of the charming hostess, for the courage necessary to enter the sickroom of a child. She must be led to see the challenge of homemaking as a life-work, second to no other in which a woman can engage. With less than this the home economics teacher ought not to be content.

Homemaking education, on the other hand, is not a part of a general curriculum. It is a separate and distinct program complete in itself. It possesses definiteness of aim, purposing to teach girls and women how to meet adequately the manifold problems involved in carrying on the modern home. It assumes that every person enrolled in the curriculum is there because she is vitally interested in becoming an intelligent and efficient homemaker. And it recognizes that experience as a homemaker is necessary for successful teaching.

Such a program should appeal to certain definite groups of women, each of whom knows fairly accurately her reason for being enrolled. Women already married and alert to the need for further training may be expected to respond to the opportunity to improve their efficiency as homemakers. Courses organized to meet such needs in terms of at least newly-married women, young mothers, and mature homemakers should be a part of the program of homemaking education.

Engaged girls constitute a second group. Every teacher of homemaking should have at least one class pointed specifically to the problems faced by young women about to be married. As a teaching situation, nothing is left to be desired. Interest and enthusiasm in the project, commonality of purpose on the part of all enrolled, immediacy of application of that which is being learned—all the factors upon which successful teaching depends, are there in ample measure. The homemaking teacher who does not capitalize the situation in this regard cheats herself of a rich and helpful experience.

Closely comparable to the engaged girl group is the group of mature girls who, though still not "promised," nevertheless wish training for what they know will be their ultimate vocation. Here may be included the older high school girls as well as the younger single women of the community. No one can overestimate the importance of adequately serving these women.

The girls in continuation schools embrace another group which presents a challenge to the homemaking teacher. For most of them continuation school represents the last formal contact with education. For most of them marriage will come soon, and children shortly thereafter. For most of them the home from which they have come has contributed little of positive value to their training for the responsibilities of wifehood and motherhood. The time is short and the hours few for giving homemaking training in the part-time school. Yet some of the most effective work is being done with this underprivileged group by teachers who, having seen the situation as it truly is, have caught a vision of what might be accomplished. And those who have accepted the challenge have seen their girls coming back for more training after the compulsory age limit has passed. They have marched through pregnancy and child-rearing with mothers little more than children themselves. They have had their reward out of all proportion to the time and effort expended.

There are other groups. Space permits mention of but one more. The problem of training employed homeworkers, actual and potential, has barely been touched; and until it is intelligently attacked, the servant problem will remain largely unsolved. There exists an opportunity for the homemaking teacher to make an impression if she will but study the problem carefully and follow fearlessly where the facts lead her. She will face as an important consideration the stigma which is still attached to the vocation of servant. Offsetting that stigma, she will have to marshall the array of advantages which is beginning to be part and parcel of the vocation of homemaker's assistant. There is everything to gain and nothing to lose in training young women for such work.

What a glorious opportunity is presented to the homemaking teacher! Through her, childhood can be conserved. Through her, a higher type of citizenship can be evolved. Through her, a finer type of community life can be built up. Through her, a happier home life for many can be brought about. The training which she gives is the best insurance against divorce, for the beginnings of incompatibility are resident in unwise choice of life partner, lack of knowledge of how to spend money wisely, and inability to make of the home a comfortable and desirable place in

which to live, both physically and mentally. The homemaking teacher, if she is well trained, constantly emphasizes these aspects in her teaching.

We are rapidly coming to the point of view that will cause us to consider no man or woman educated who has not faced the real issues of marriage and homemaking. This writer believes that no girl should be granted a diploma of graduation from a high school or college who has not considered the problems of wifehood and motherhood. We now require in many of our leading universities that every person shall know how to swim before he is granted a degree. Is it unreasonable to require that every man and woman shall be taught how to keep afloat in the sea of matrimony?

THE FUNCTION OF RESEARCH IN PUBLIC SCHOOL HOME ECONOMICS[1]

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A quarter of a century ago not enough research in education was being undertaken in this country to warrant its recognition. Today, research is an exceedingly important factor in shaping education, from the broad general policies to the minutest details. There are those who believe that this instrument is a monster which will eventually turn on its creator and destroy not only him but the educational scheme which he represents. There are others who are equally certain that research is one of the most important factors, not only in raising the general level and specific character of education, but also in directing it toward higher and more wholesome ends. Since home economics is a relatively new branch of the public school curriculum, the writer will attempt to show where it can utilize the services of this new educational instrument to the improvement of its practices.

Research is careful, critical, diligent, protracted investigation for the purpose of discovering the truth. It is not merely a search for the truth. It must be extended over a period of time; it must have a definite objective; it must involve clearly defined technics; and it must arrive at definite conclusions which are warranted by the assembled data. All search for truth, therefore, cannot be considered research, but only that definite part of it which meets these qualifications. The place where research is undertaken is of little consequence so long as the investigation possesses the required characteristics. It may go on in the library, the schoolroom, the laboratory, the administration office, or any other place if it is persistent, clearly defined, and directed toward the solution of some very definite problem.

Truth as the end in research may be fixed or relative. Those individuals who, by some form of research, discovered and perfected the number system produced a fixed truth. There are one hundred primary addition facts, and these are always the same regardless of the particular situations in which they may be used. Nine and six are always fifteen to the layman, the professional educator, the bricklayer, the miner, and even the lawyer.

[1] Based on an address before the meeting of supervisors and teachers of home economics held in connection with the Department of Superintendence, National Education Association, Atlantic City, February 24, 1930.

Most of the research in education is not for the purpose of discovering a fixed truth inasmuch as most of the so-called truth in education is not of the fixed type. It is one thing today, but it is something else tomorrow. One investigator may report that the intelligence of continuation school children between the ages of 14 and 16 years is lower than that of pupils of the same age who remain in regular school. If the research technic is sound, this conclusion remains the truth until someone repeats the experiment and finds different results or arrives at another conclusion by superior technics. So long as education is a living, progressing movement, the truth concerning it must continue to be relative, since to consider it as fixed will tend to remove the life blood of the organization and crystallize the materials until they return to the dust from which they are created.

The end of research may be the discovery of new truth or the refinement of that which already exists. Good illustrations of the former are the isolation of the most important traits of successful and unsuccessful homemakers by Dr. W. W. Charters, Ohio State University, and the analysis of the home economics activities of 5,106 girls in the junior and senior high schools of Denver, Colorado, by Mrs. Kate W. Kinyon, director of home economics. Some of the best examples of refinement of old truths are found in the automobile. Each year the engineer makes different changes from the carburetor to chassis. A good illustration of this type in the field of home economics education is in the study of the placement of home economics content in junior and senior high schools by Dr. Annie R. Dyer of Teachers College, Columbia University, and the analysis of textbooks in home economics by Miss Ella J. Rose of the University of Minnesota. Most educational research is not for the purpose of discovering new truths, but for re-evaluating and refining the educational half-truths which are now in existence.

Research is needed in so many places in home economics education at the present time that the writer can merely indicate the spots in which the demand is most pressing. Some of these are as follows:

1. *In defining the general aims, purposes, and functions of home economics and the objectives at various instructional levels.* The present curriculum traces its beginnings to the decade of 1870–1880, when it came into the public secondary schools as a vocational subject from the private cooking schools whose purpose was to train engaged girls and newly married women to become skilled in a small phase of their new profession of adult homemakers. That this concept still exists is shown by the fact that some of the courses of study now being issued, state that the main objective in home economics is "to prepare the girls for future homemaking,"

and then proceed to include mainly the development of skills in foods, clothing, household management, and sanitation. If this narrow concept of the purpose of home economics education was really valid twenty-five years ago in relation to the social life of that day, it has certainly lost its effectiveness at the present time. Those who still advocate it have not based their conclusion upon an analysis of all phases of home life. They have neglected the sociological side, dealing with the contributions of the home as a social institution to the development of our present civilization; the psychological side, involving the ability of people to live together harmoniously without developing those incompatibilities which later lead to the divorce courts; the social side, pertaining to social recreation within the home of all members of the family as a group or as individuals; the economic side, dealing with the family income and its equitable apportionment among various members of the group; the educational side, pertaining to the continuous growth and development of all the members of the family in educational outlook, ideals, culture, moral fiber, and interests of a broader and deeper type; and the biological side, dealing with sex life, reproduction, and the rearing of children.

If those engaged in home economics education are interested in promoting the greatest usefulness of the subject to the education of boys and girls, they must, first, take a broader view of the meaning of home economics education; second, discard the vocational aim in the general education of boys and girls; third, define their objectives at the various instructional levels in terms of the present home life of boys and girls rather than in terms of future adult homemaking. There is need of much research in setting up these aims because without valid aims the whole program is jeopardized.

2. *In determining what content should be taught.* The usual standard for determining content in home economics is frequency of occurrence in present practice. This is learned through analyses of courses of study, textbooks, and opinions of home economics teachers. This procedure tends to make the subject static by perpetuating existing conditions and the narrow type of function of home economics education out of which present practice has grown. The great need is to produce content which is in harmony with the broader aims, purposes, and functions of the subject. Research is needed to determine what materials should be taught in relation to the sociological, psychological, social, and other phases of home life. Home economics teachers and supervisors are eager for such materials and ready to incorporate them into present content as soon as they are available.

3. *In determining the organization of content for teaching purposes.* The present, most commonly accepted standard for determining the organization of content is that of tradition. Some studies have been made to show that certain topics are placed in particular grades and that there is a definite order and sequence of materials in foods, clothing, and home management courses. Common practice is valuable as a guide only when it is carried on in relation to some generally accepted function. Common practices in relation to to a vocational function which is now being rejected, must necessarily offer a poor standard for organizing content in relation to new aims. There is a need for a large number of home economics research studies in grade placement and in the organization of materials within each grade. These studies should be experimental and should be conducted with materials selected in relation to the broader home economics philosophy.

4. *In determining methods of teaching.* The present standard of determining methods of teaching is also that of past and present practice. Teachers who received their training in institutions emphasizing the narrow functions of home economics education are largely in control of the teaching of the subject throughout the country. They tend to accept the vocational phase and to emphasize the mechanical skills rather than the broader insights, deeper understandings, and more wholesome attitudes toward home life. They think of method as the manipulation of the materials in the foods and clothing laboratories, and their idea of the improvement in technic is to acquire some of the latest and most up-to-date laboratory equipment. Research is very much needed to improve the technics of teaching the mechanical skills which have been the pièce de résistance of the curriculum in the past and also to develop sound methods of teaching the new materials which are rapidly growing and which must necessarily continue to accumulate.

6. *In discovering the outcomes of home economics education.* With the vocational concept, emphasis was laid upon the practice of a small number of very definite habits in relation to foods, clothing, and home management. While a number of these are sound and should be included in even the most modern course in home economics, there is need for much research to determine the insights, the meanings, the generalizations, the attitudes, and the concepts in the whole field of home life which should be understood, appreciated, and, as far as possible, practiced by all individuals who are living in a home today. Their isolation will require much research, and their organization for teaching purposes will mean further investigations.

6. *In determining the most effective methods of training home economics teachers.* It has already been pointed out that the present corps of teachers has been trained in institutions emphasizing the vocational aim. It is necessary that there be trained teachers who see the general educational values as of greater importance and who are equipped to deal effectively with the new materials which must necessarily become a part of home economics courses. There are three reasons why this change is not likely to come about in the near future. The first is the tendency to confine the training of home economics teachers to the land-grant colleges and universities whose major function is primarily vocational. The second is the effect of science in producing new facts and the re-defining of old ones, especially in nutrition. Many teacher-training institutions have misinterpreted the place of such science in the home economics curriculum and are training their students to become nutrition experts rather than specialists in interpreting the present scientific facts concerning foods and health to secondary school boys and girls. The third is the inability of many skilled professors in teacher-training institutions to see the needs of secondary school teachers and consequently to give the functional or professional training which elementary and secondary school teaching demands. They simply continue to promote their past academic practices. There is need of research in teacher training to determine what subject or parts of subjects are best for secondary school teachers, how they should be organized into a teacher-training curriculum, what are the best methods of changing the point of view of present college teachers, and how a more modern training program can best be put into practice.

There is also a further problem of giving basic training in home economics education to all elementary school teachers since home economics content is rapidly penetrating other school subjects. In an attempt to make the materials of instruction in social science, general science, health, and general arts function in the immediate life of the child, curriculum makers have borrowed very generously from the content formerly taught in elementary home economics. With the tendency to minimize subject categories and to disregard the boundaries between regular and special subjects, there arises the need for training all elementary school teachers so that they can teach effectively the home economics content in the newer courses. Here again is an opportunity for research to determine what modifications should be made in present teacher-training programs to meet the changing conditions.

How should the results of research be used? The mere production of new truth or the clarification of old truth is not enough. A collection of facts does not satisfy present needs. There must be some means of evaluating facts so as to determine those which should be accepted or rejected. This means the development of standards for judgment of the facts which past research has refined and which new research will produce in order that as little error as possible may be made in their interpretaion and use. The present criteria for the evaluation of the results of research have grown out of past aims, purposes, and practices. There must be set up new standards based upon the broader philosophy, the enriched content, the vitalized methods, and the changed outcomes. Here is a research opportunity which is rich in potency.

The curriculum maker cannot rest his case with the mere evaluation of the facts. He must go a step further and devise ways of incorporating the new truths in the curriculum so as to give teachers the materials and methods for leading children toward different insights, attitudes, and practices. Here the technic varies with the facts and their evaluation. An important discovery in nutrition, such as the value of vitamin D in promoting health, should be utilized immediately, its effects noted, the ordinary sources of supply discussed, the uses of possible synthetic compounds explained, and the practice of a suitable intake encouraged. It might be wise for a school system to ignore entirely a statement of the items taught in food courses in the ninth grade by the one hundred largest cities in the United States, especially if its home economics was being organized to meet a different function from that accepted by those cities. The technics for the utilization of the results of educational research in courses of study construction still have to be defined. Here is a field pregnant with possibilities.

The prognosis is for more and better research in home economics. The field has hardly been touched. The amount in the past has been altogether too limited. The purpose has been much too narrow, and the results have been too little used in effecting changes in practice. Many of the technics have been so loose and so ill-defined as to make it almost impossible for another worker to repeat the experiments of an earlier investigator. There is a very definite need for a more careful consideration of the purpose of research and a clearer definition of the technics to be used. It is only on the basis of more and better research that more accurate and more refined facts can be produced. It is only as a more accurate body of knowledge in home economics can be assembled that

believers in the subject can expect to raise it from the level of a skilled trade with a vocational function to that of a profession with a dominating influence not only in conserving and holding intact the fabric of the social order, but also in evaluating and directing changes to new high levels of social effectiveness. The responsibility for promoting, maintaining, and practicing a more comprehensive program of home economics education rests with those who are the teachers and supervisors in the teacher-training institutions and in the public schools of America. By the promotion of sound educational research, there can be accumulated a body of facts which will be of the utmost significance in developing a reconstructed school curriculum wherein home economics will be given a place more in harmony with its importance in American life.

NUTRITIONAL ANEMIA: A REVIEW OF RECENT LITERATURE[1]

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I. The Relation of Iron to Hemoglobin Regeneration

That iron is in some way concerned with the formation of hemoglobin and thus with the prevention of simple anemia has been known for many years, but it has always been a disputed question as to whether or not the iron must be in organic combination to be available. Sherman, in the second edition of his "Chemistry of Food and Nutrition," published in 1918, said "while it cannot be stated positively that inorganic iron is or is not used by the animal body as material for the production of hemoglobin, the best medical opinion appears to support the conclusion that hemoglobin is derived essentially from the organic iron compounds of the food, while inorganic iron acts mainly if not entirely as a stimulus." This was the general concensus of opinion at the time Hart and his coworkers at the Wisconsin Experiment Station reopened the question with an investigation which has decidedly modified our conception of the nutritional requirements for hemoglobin formation and has explained most of the discrepancies in the long controversy of organic versus inorganic iron in nutrition.

Making use of the fact first noted by Bunge as early as 1889 that milk is very low in iron, they (1) first produced anemia in young rabbits by feeding them nothing but milk, with the addition of a little sodium citrate to aid in the digestion of the milk by preventing the formation of hard curds. When the animals showed a hemoglobin content of about 50 or 60 per cent and a reduction in erythrocytes to from 3 to 4.5 million per cubic millimeter, various materials were given as supplements. Inorganic iron in the form of ferric oxide proved incapable of correcting the anemia, but when the iron oxide was supplemented with fresh cabbage or alcoholic extracts of dried cabbage or yellow corn meal the anemia was rapidly cured. Since these extracts were free from iron, it was concluded that inorganic iron is utilized for hemoglobin production only when accompanied by certain organic supplements. Vitamins A, B, C, and D were definitely ruled out as being responsible for this effect, and it was thought probable, though not definitely proved, that vitamin E was not involved.

[1] Presented before the home economics section of the Association of Southern Agricultural Workers, Jackson, Mississippi, February 7, 1930.

The next step in this investigation, after improvements in methods of determining iron in biological materials (2), was to attempt to increase the iron content and anemia-preventing properties of goat's milk by such supplements as had prevented and cured anemia in rabbits (3). Large amounts of iron in the form of oxide or sulfate fed alone or supplemented with green cabbage did not increase the iron content of the milk and rabbits fed the milk developed anemia just as rapidly as those fed the milk of goats on the basal ration alone. The milk of cows fed alfalfa hay proved to be no richer in iron than that of other cows fed timothy hay, only half as rich in iron as alfalfa. It was concluded that "the percentage of iron in the milk seems to be an established amount for any specific animal and can not be varied even by drastic changes in the iron content of the diet."

In order to determine whether or not vitamin E is concerned in the supplementing action for iron, lettuce, a substance rich in this vitamin, was tested by the Wisconsin workers (4) and found effective as a supplement to ferric oxide in curing anemia in rabbits on a milk diet. Vitamin E was soon ruled out, however, by the discovery that the ash of the lettuce was equally effective. This suggested moreover that the supplementing factor must be inorganic rather than organic. Samples of ash similarly prepared from cabbage and from other materials including dried beef liver, spleen, marrow, and ground yellow corn proved effective in varying degrees as supplements to inorganic iron. These materials contained traces of iron, but the ash of an alcoholic extract of cabbage, one of the most effective materials, was practically free from iron.

In considering again the question of the relative availability of soluble and insoluble iron salts, it was found that a sample of C. P. soluble ferrous sulfate, $FeSO_4 \cdot 7H_2O$, was effective without other supplement, but that when further purified it became less effective. It was suggested that the favorable results which had been reported by Mitchell and Schmidt (5) with certain soluble iron salts in the cure of rats rendered anemic by an exclusive milk diet might have been due to active impurities in the salts. In their studies Mitchell and Schmidt had found it necessary to carry rats into the second generation before anemia appeared, but the Wisconsin workers (6) found that young rats produced in their stock colony when weaned at the age of 3 to 4 weeks and placed on a whole milk diet developed profound anemia in the course of 6 or 8 weeks, a period not much longer than required for rabbits. This led to the use of rats in place of rabbits in the continuation of the investigation.

It was found impossible (7) to increase the hemoglobin level of the

blood of anemic rats by the administration of pure inorganic salts of iron (chloride, sulfate, acetate, citrate, and phosphate) in amounts furnishing 0.5 mg. of iron per rat per day; but the ashed residues from dried beef liver, dried lettuce, and yellow corn, or the acid extracts of these materials when fed at such a level as to introduce the same amount of iron, were all effective in curing the anemia. Further proof was thus afforded that some other inorganic substance active in exceedingly small amounts was essential for hemoglobin formation.

The next step was obviously to determine the nature of this inorganic substance. Knowledge that in molluscs and crustacea, copper exists as an integral part of the compound hemocyanin which functions as a respiratory pigment similar to hemoglobin in the higher animals, together with the observation that the ash of some of the effective materials was slightly blue in color, led to a trial (8) of a small amount of copper (0.25 mg.) as copper sulfate plus 0.5 mg. of iron as ferric chloride added to the whole milk diet. This was followed by a very rapid response in hemoglobin regeneration. Later tests with smaller amounts of copper showed that even with 0.01 mg. daily as a supplement to 0.5 mg. of iron a return to normal eventually took place, although the blood regeneration was more rapid at levels of 0.05 and 0.1 mg. of copper daily. The concentrated liver preparation used in the treatment of pernicious anemia was next tested and found to be potent as a supplement to iron when fed as such, as the ash, or as an acid extract of the ash. When subjected to fractionation the fraction precipitated by hydrogen sulfide was effective, while other fractions were without curative properties. The potent fraction contained copper and the others did not.

It thus appeared to be demonstrated quite conclusively that copper is in some manner essential for the utilization of iron in hemoglobin formation. How it thus functions was considered at this time to be "almost idle speculation. We might advance the orthodox suggestion that the copper acts as a catalyzer for some reactions concerned in hemoglobin building just as iron functions in the production of chlorophyll, although it is not a constituent of the chlorophyll molecule. We believe that our work emphasizes the necessity for the intensive study of the action of small amounts of inorganic elements in nutrition."

A brief report from the Kentucky Station (9) of similar results in the use of copper as a supplement to iron in hemoglobin regeneration in rats on a milk diet soon confirmed the Wisconsin findings and awakened interest in the distribution of copper in natural food materials. An examination of existing methods for the determination of copper in biological materials

led Elvehjem and Lindow at the Wisconsin Station (10) to adopt the Biazzo colorimetric method as the most promising. With certain modifications and suitable precautions to avoid contamination with copper from outside sources, the method was found to be capable of detecting as small an amount as 0.02 mg. of copper with a high degree of accuracy. Out of a total of 10 samples of iron salts tested for copper by the new method only two were found to be copper-free.

Analyses of about 160 samples of common food materials (11) showed copper to be present in amounts ranging from 0.1 mg. per kilogram in fresh celery to 44.1 mg. in fresh calves' liver. Beef liver contained less copper, 21.5 mg., and hog liver still less, 6.5 mg., per kilogram of fresh material. Oysters were much richer in copper than any of the other sea foods examined, containing 30.7 mg. per kilogram of fresh material. Arranged in descending order of copper content, the different classes of food were as follows (omitting liver and oysters): Nuts, dried legumes, cereals, dried fruits, poultry, fish, animal tissues, green legumes, roots and tubers, leafy vegetables, fresh fruits, and nonleafy vegetables. Milled cereals were much lower in copper than the whole grains from which they were milled. In this connection it is of interest to note that Rose, Vahlteich, and Bloomfield (12) secured a prompt response in the regeneration of hemoglobin in rats rendered anemic by a whole milk diet on supplementing the diet with 6 gm. of whole wheat daily.

The relative distribution of copper apparently does not follow that of iron, for green leafy vegetables are higher in iron than are roots and tubers (13), and the opposite is true for copper.

Attempts (14) to increase the copper content of cow's and goat's milk by supplementing the ration with copper salts gave negative results as had previously been the case with iron. The copper content of the milk of cows in different sections of the country showed only slight variations, the range being from 0.123 mg. to 0.184 mg. per liter.

Continuing their anemia studies (15), the Wisconsin investigators found that iron wire such as is used in the preparation of pure iron salts contained sufficient copper to cure anemia in rats when the salts prepared from it were fed at high levels, but that these salts when freed from copper by treatment with hydrogen sulfide were no longer capable of curing anemia. This suggested that the success reported in the literature in the treatment of experimental anemias with heavy doses of so-called pure iron salts is attributable to copper contamination of the salts and that this may also be true in the cure of human anemias with inorganic iron.

Further proof that the anemia on diets of whole milk and iron is due to a deficiency of copper was obtained (16) in the cure of such anemias by pure iron salts supplemented, respectively, with several liver fractions, hydrogen sulfide fractions of the acid extracts of the ash of two of these preparations, and with copper as a solution of copper sulfate, all furnishing the same amount of copper.

Proof of the effectiveness of copper as a supplement to iron did not necessarily rule out similar effects with other inorganic elements. Soon after the first reports on the supplementing value of copper for iron, Titus and Cave of the Kansas Experiment Station reported briefly (17) that they had found manganese to be likewise effective in supplementing iron in hemoglobin regeneration in rabbits on a whole milk diet. A little later (18) they reported similar results in the use of manganese as a supplement to iron in hemoglobin regeneration in rats and also confirmed the Wisconsin observations on the use of copper as a supplement. In their experiments 0.5 mg. daily of iron as chloride was used alone and supplemented by 0.05 mg. of copper as sulfate or 0.1 mg. of manganese as chloride, all of these salts being carefully purified. They reported that rats having a fairly high initial hemoglobin content were able to utilize the iron to some extent when unsupplemented by copper or manganese, but that those with low hemoglobin showed no beneficial effects from the iron alone. All of the rats receiving the copper supplement and most, but not all, of those receiving manganese showed satisfactory hemoglobin regeneration. Those receiving both copper and manganese showed the most rapid response of any of the groups. This was thought to indicate that a group of substances rather than a single substance is essential as a supplement to iron for hemoglobin building.

Following a slightly different plan, the Kansas investigators later (19) supplemented the whole milk diet of three groups of newly weaned rats with 0.1 mg. of manganese, 0.05 mg. of copper, and 0.5 mg. of iron, respectively. At the end of 5 weeks, when all of the animals showed a decrease in hemoglobin, the copper and manganese were replaced with 0.5 mg. daily of iron and those receiving iron were continued on the same diet. The hemoglobin content of the blood in the first two groups immediately began to increase until in about 5 weeks it was practically normal, while the third group receiving iron continued to grow more anemic.

Beard, Myers, and Shipley (20) reported that traces not only of copper, but of nickel, cobalt, and germanium added to iron brought about regeneration of hemoglobin in young rats made anemic on whole milk feeding more rapidly than did iron alone.

Mitchell and Miller (21) attempted to determine whether inorganic factors other than iron and copper play any rôle in the synthesis of hemoglobin by feeding to rats rendered anemic on whole milk a concentrated water-soluble extract of spinach in amounts sufficient to supply 0.5 mg. of iron yer day. The response was much more rapid than to the iron and copper combination, and the ultimate level of hemoglobin was 25 per cent higher. Corresponding amounts of the dry ash of the extract mixed with the milk did not prove as effective as the original extract; but when the ash was dissolved in a small amount of concentrated hydrochloric acid and diluted, it proved as effective as the unashed extract. Mitchell and Miller concluded that the particular combination of inorganic salts present in spinach is more effective than any combination of inorganic salts which they had as yet been able to find and that solubility of the salts is an important factor in their effectiveness. They later (22) reported that an amount of spinach extract furnishing 0.25 mg. of iron brought about almost as rapid hemoglobin regeneration as noted in the preliminary report for 0.5 mg., and that a qualitative analysis of the extract showed the presence of copper, antimony, tin, iron, aluminium, zinc, manganese, strontium, sodium, potassium, calcium, magnesium, and phosphorus.

Prior to the first announcement from the Wisconsin Station of the supplementing effect of copper for iron, an investigation had been begun by Krauss at the Ohio Station (23) to determine the nutritive deficiency in milk which is responsible for the production of anemia. Various iron compounds had been tested and found ineffective as a supplement to milk for the prevention of anemia in rats. Following the clue suggested by the Wisconsin investigators, copper sulfate in 0.16 mg. daily amounts was administered to the rats and found to be effective when given either as a supplement to iron or alone (24). The success of the copper alone was thought to indicate that the small amount of iron in milk was rendered more available by the copper and to point to as serious a deficiency of copper as of iron in milk. The various constituents of ordinary synthetic rations were then fed one by one as supplements to the milk and the materials found effective were analyzed for iron and copper (25). Of the materials used, agar, casein, starch, and yeast were effective; and rice polishings, cod-liver oil, irradiated milk, and wheat germ oil, ineffective. The negative results definitely excluded vitamins B, A, D, and E as having any supplementary effect for milk in hemoglobin production. A rather definite relationship was established between effectiveness in the regeneration of hemoglobin and the proportions of copper and iron in the

supplementing materials. The hemoglobin levels were the highest when at least 0.45 mg. of iron and 0.04 of copper were furnished per rat per day, these amounts corresponding very closely with figures reported from the Wisconsin Station as most effective.

In order to answer the claims of the Kansas investigators and others that copper, while admittedly effective, is not specific as a supplement to iron in the production of hemoglobin, the investigation at the Wisconsin Station was extended to other elements (26). Pure salts of 12 different elements were tested alone and in combination for their ability to supplement a diet of whole milk and iron in the production of hemoglobin in rats. Special attention was paid to manganese, including the testing of a sample of the manganese salt found effective at the Kansas Station. With the exception of arsenic, which produced a slight but temporary effect, negative results were consistently obtained with all of the salts tested. Positive results reported for other elements than copper were considered to be due to traces of copper as an impurity in the salts tested.

There is always a question of the validity of applying to human nutrition results obtained in animal feeding tests, but the more universal the results with different species of animals the more likely are they to be of application to the human species. The first of these nutritional anemia studies were conducted on rabbits, the later ones on rats, and still more recently the Wisconsin studies have been extended to chicks with similar results (27). Considerable difficulty was at first encountered because normal growth could not be secured in chicks on an exclusive milk diet and various additions to the milk contained sufficient iron and copper to render the results valueless. The basal diet finally selected as a supplement to the milk consisted of granulated starch supplemented with alcohol- and ether-extracted yeast. On this diet anemia was quickly produced and was cured by the addition of purified ferric chloride with minute amounts of copper but not by the iron salt alone.

It has been noted that the Wisconsin investigators were unable to raise the iron and copper content of cow's and goat's milk by additions of these elements to the ration. A similar failure has been reported from the same station (28) in attempts to raise the iron and copper content of hen's eggs by prolonged feeding of supplements of 50 mg. of iron daily with or without 0.5 mg. of copper. Egg white contains an inappreciable amount of iron and was consequently not tested, but no appreciable increase was noted in the iron content of the yolk or in the copper content of yolk and white following supplementing the ration for 14 weeks with iron or iron and copper.

Very recently the Wisconsin studies have been extended to swine (29). Anemia in suckling pigs kept indoors is recognized as very prevalent and the cause of a high percentage of mortality among young pigs farrowed in the winter. It was found that the feeding of considerable amounts of iron and copper to the sow did not delay the onset of anemia in the suckling pig, another proof of the impossibility of increasing the iron and copper content of milk. The anemia was rapidly cured by the administration not only of iron and copper salts, but of soluble iron salts alone. The apparent lack of need of copper is thought not to disprove the necessity of copper as a supplement to iron inasmuch as the pigs were not placed under as restricted conditions as is possible with smaller animals and were probably able to acquire small amounts of copper. "From a practical point of view the feeding of iron is the important preventive of anemia in suckling pigs. However, it is entirely possible that the importance of copper can be demonstrated by keeping the pigs under very restricted conditions and allowing them to remain anemic for some time to insure a heavy drain on the copper reserves."

(*To be continued*)

OPEN FORUM

A Cooperative State and County Project in Parental Education. At the Junior College which the University of Tennessee maintains at Martin in the western part of the state, a cooperative scheme has been worked out for sharing the benefits of its parental education work with the school systems of nearby counties. As the plan suggests a means of financing such work in smaller communities, a description of it may be worth giving.

As part of the parental and preparental education program of the Junior College, the home economics department offers a six-hour, quarter course in child development and maintains a well-trained instructor and a nursery school. The College has at present only 75 women students; and though nearly all of these take the course in child development, they do not need the full time of the instructor, and her work at the College is easily arranged to come in two college quarters. By cooperation with the state supervisor of home economics and county superintendents of education, her time during the third quarter is utilized for adult classes in parental education in the neighboring counties.

In this cooperative project, the instructor's salary for the quarter is paid from Smith-Hughes funds through the counties in which the work is done, and the College pays the traveling expenses, the teacher traveling entirely by bus or rail. The state supervisor of home economics is directly responsible for the adult classes and helps in organizing them.

The classes meet once a week for ten weeks. The ten lessons given this year are on the following topics:

1. Children's fears
2. Children's tempers
3. Feeding the young child
4. Value of rest and sleep
5. Training in eliminative and other physical habits
6. Teaching the right attitude toward property
7. Teaching the right attitude toward reality
8. Teaching the right attitude toward authority
9. The child and his family
10. The child and his country

During 1929–30, eight classes were organized, four in the same county as the Junior College, and the rest in two adjoining counties. How the

instructor's time is used may be seen from the following schedule for one week:

Monday afternoon, at Woodland Mills, meeting in the home economics room at the school building at 1.15; Tuesday morning, at Dresden, meeting in the high school auditorium at 9.30; Tuesday afternoon, at Martin, meeting in the director's room of the Martin Bank at 1.30; Wednesday afternoon, at Union City, meeting at the school in the auditorium at 1.30, and at the Westover school in the principal's classroom at 2.45; Thursday morning, at Milan, meeting in the mayor's office at 10.15; Thursday afternoon, at Greenfield, meeting in the theater at 2.30; Friday afternoon, at Sharon, meeting in the high school auditorium at 2.00.

The attendance has been excellent, and the experiment is considered a decided success. Besides being an excellent illustration of cooperation between different parts of a state's educational system, it is noteworthy as a way to finance two much-needed projects in counties where two independent, full-time programs would be out of the question.—JESSIE W. HARRIS, *University of Tennessee.*

Social Rooms in Dormitories. In planning students' dormitories, it has long been the custom to consider the bedrooms and essential utility rooms first and to allow the students' social life within the dormitory to adjust itself to such remaining space as could be devoted to this purpose. Today we are emphasizing the advantages to be derived from adequate social life as it may center in the dormitory.

In a study of dormitories for women which has been conducted at Teachers College, Columbia University, one of the points considered was the amount and character of the space allowed for social purposes. The facts here given were drawn from questionnaires filled in by deans and dormitory directors responsible for 25 dormitories, scattered fairly evenly over the United States. Detailed data are on file at the College.

All but two of the dormitories were at colleges or universities. Their capacity ranged from 8 to 320 students; in about half it lay between 75 and 135.

The number of rooms used for social purposes in each dormitory varied from one to 17, with an average of 3.4. Seven dormitories provided only one room; and 9, only two.

The space per capita in social rooms was reported for 14 dormitories, in which it ranged from 4.8 to 75.1 square feet, with an average of 22.7 square feet. In 5 cases it fell notably below the average, and in only two did it rise markedly above. Of the total of 85 social rooms reported from all dormitories, 62 were on the first floor, with 31 near the entrance, and 31

not so located; 9, 5, 4, and 1 were located respectively on the second, third, fourth and fifth floors; and 4 were in the basement. Social rooms on the upper floors were mainly used as lounges for the students; and those in the basement, as play or recreation rooms.

The uses to which the rooms were put are shown in the following list:

66 are used for all social activities
9 are definitely used for reception purposes, rather formal
6 are used for clubs and meetings only
5 are specifically used for reading
4 are used for floor groups
3 are used for all activities except dancing
3 are used for parties for house residents only
3 are used for students' guests
3 are used for play and recreation
1 is used as a radio room

Regarding the service of refreshments in social rooms, in the 17 dormitories reporting on this point, it was allowed in 30 out of 93 rooms. Regarding the place from which such refreshments were served, of the 21 reporting, 9 served from the main kitchen, 6 from a kitchenette, 5 from some other room, and 1 from the social room itself.

This study has been far too limited in its scope to allow definite conclusions to be drawn from it. Since the returns, however, have come from dormitories almost equally distributed throughout the various sections of the United States, it is hoped that the results show prevailing trends regarding social space.

The institution economics section of the American Home Economics Association suggests a minimum standard of 20 square feet of social space per capita. It is interesting to note that the average per capita space found in this study approximates this minimum standard. The range, however, shows the lack of any uniform practice in this regard.

The most desirable location for social rooms appears to be on the first floor, with at least one such room near the main entrance of the building. In the larger dormitories lounges for students are generally provided on the upper floors, while play and recreation rooms are occasionally established in the basement; these rooms merely supplement other social rooms on the main floor.

Obviously, further study is required not only on space allowance but also on character and location of social space in dormitories.—GRACE M. AUGUSTINE, *Institution Management Department, Teachers College, Columbia University, New York City.*

Housing and Home Economics. Housing often seems like a Cinderella among home economics subjects—either crowded out of the curriculum entirely or appearing as a pale, anemic topic which neither pupil nor teacher finds particularly interesting. This is probably due largely to two things: the vagueness of our present information regarding many aspects of the planning, building, and equipment of family dwellings as these affect the life of the family; and the lack of broad, general background which will show the real social significance of the subject. It is with the second of these difficulties that this brief discussion deals.

Housing as seen by sociologists and housing as seen by home economists have many aspects in common, though the approach is somewhat different. The sociological study of housing observes and reports existing facts as to the dwellings in which civilized families shelter themselves, and their effect for good or evil on the health, habits, and happiness of the persons sheltered. What differentiates good and bad housing, urban or rural? How much is there, absolutely and relatively, of each? To what extent is housing an economic problem? To what extent a problem of education? What should be accepted as a minimum health and decency standard of housing for an American family? How much does it cost to produce it? How much can the lower income groups afford to pay for the purchase or rental of a home? How large is the group which cannot attain the minimum standard?

Home economics, on the other hand, approaches the subject of housing from the standpoint of the family that is to use the dwelling and asks what characteristics the latter should possess to adapt it best to their varied needs. It is an applied science and, to be useful, must link up closely with pure science. The investigations of pure science in physiology, biology, bacteriology, or bio-chemistry are the foundation of the nutrition work in home economics classes. A good teacher of cooking must have some pure science background to make her teaching sound and vital.

Home economics courses should train the homemakers of tomorrow in what an American home ought to be—and that means the dwelling itself as well as the activities that go on within it. What is essential to health? To normal family life? What is pleasant and useful, but may be dispensed with if necessary? Light, air, space, cross-ventilation, orientation and sunlight, number and size of rooms in relation to number of family, water supply, bathing facilities, sewers, toilet facilities, method of heating, method of lighting—all have their importance. The advantages and disadvantages of apartment house life compared with those of

a single-family detached house in a garden have great significance in view of our rapidly changing habits. Home ownership versus renting is another topic that needs adequate treatment. It includes the cost of a new home, the possibility of modernizing an old home, the relation of home purchase to income, and the best way to finance home ownership. The place of rent in the family budget must be considered at different income levels, and what ought to be obtainable for it.

To present such topics adequately, the teacher needs a broad outlook. She should understand how the masses of the people live in great cities, in small towns, and on the farm. She should see these things in relation to industrial, agricultural, and racial problems; to immigration, wages, building costs, banking, mortgages, building and loan associations, tenement house and housing codes and their enforcement, death-rates, sickness-rates, delinquency and crime. She should known something of how other nations are seeking to solve their housing problems and what is being done in different parts of our own country. At least one comprehensive housing course, with social-economic approach, should form part of her general training, with opportunity for further specialization if desired. This is the pure social science background for the housing part of her applied science work.

Before this ideal can be carried out, our training schools for home economics teachers will have to enlarge their curricula. Teachers College, Columbia University, has been a pioneer in experiments with such a course. Professor Benjamin R. Andrews, whose courses in household economics and whose text-book "The Economics of the Household" give generous space to the question of the sociological aspects of housing, initiated in 1918 a course entirely devoted to housing. After giving it himself for several years, he brought Mr. Harrison and myself into the field. Since 1925, it has been my privilege to give a course on housing in relation to family welfare in the summer session, while Mr. Shelby M. Harrison of the Russell Sage Foundation covers much of the same ground in his broader winter course on housing and community living conditions. For the past three years I have also given a winter course on the social and economic aspects of the housing problem in the social science department of Columbia University which draws some home economics teachers.

To find housing as part of a broader course is not unusual in the social science departments of American universities, but courses devoted entirely to housing are still rare. Dr. Carol Aronovici gave the earliest one at Brown from 1909 to 1911 and similar ones later at the Universities of

Pennsylvania, Michigan, Minnesota, California, and Washington. Dr. James Ford, professor of social ethics at Harvard, holds the endurance record, for he has been giving a course on housing since 1913.

Much remains to be done in the way of research before the pure science data for housing can be considered even reasonably satisfactory. European countries get statistical information about housing through the census. Our national census gives only home ownership. The American Home Economics Association recently joined with the American Association of University Women and other organizations in an effort to have the number of rooms per family recorded in the 1930 census. All we succeeded in obtaining was a promise to try it out in two or three cities, while the relatively minor query (from a health and welfare point of view) as to whether the family has a radio is to be universally recorded.

The Children's Bureau of the Department of Labor has nade valuable studies of the correlation between room congestion and infant mortality, and the bulletins in its child welfare series contain important material on rural housing. The Department of Agriculture has accumulated useful data in such publications as "The Farm Woman's Problem" and "Nebraska Farm Homes." The University of Maryland deserves honorable mention for its study of farm homes; and the University of Chicago, for a number of housing surveys. But in general our American research funds have ignored the subject of housing.—EDITH ELMER WOOD, *Cape May Court House, New Jersey.*

A Bureau of Domestic Science Proposed in 1898. Home economists throughout the country may be interested to know that as early as 1898 there was a definite proposal to establish a separate Bureau of Domestic Science in the Department of Agriculture. Recent research in early home econo nics activities on the part of the national government which the writer is prosecuting in connection with a monograph on the Bureau of Home Economics (Institute for Government Research of the Brookings Institution) has brought to light this comparatively obscure and little known piece of historical record. In a rather careful persual of literature both official and unofficial, no mention of this early proposal has ever been noted. The JOURNAL OF HOME ECONOMICS for October, 1911, summarized the home economics movement in the United States up to that year but did not include this event in home economics development.

On June 1, 1898, Senator Kyle, who was chairman of the Senate Committee on Labor and Education, introduced a bill to establish a Bureau of Domestic Science (Senate Bill 4698). It provided as follows:

A BILL TO ESTABLISH A BUREAU OF DOMESTIC SCIENCE

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the sum of ten thousand dollars is hereby appropriated, from any funds in the Treasury not otherwise appropriated, for the purpose of establishing, in connection with the Department of Agriculture, a bureau of domestic science, in which investigations as to methods and appliances for the preparation of food shall be conducted; and said bureau shall make an annual report of such investigations, which shall be printed for general distribution.

Of even more importance than the introduction of the measure above noted is the fact that a hearing was held on the bill at which testimony was given by interested persons. This hearing, which took place January 26, 1899, was later published as Senate Document 298 of the fifty-fifth Congress, second session.

The bill seems to have been introduced as a result of the active influence of Mrs. John M. Palmer, vice-president of the Domestic Science Association, which was incorporated in April, 1894, for the purpose of "promoting and developing systematic knowledge of best methods and appliances for domestic art and for placing the best foods before the greatest number of people." Mrs. Palmer had been suceessful in having Senator Gallinger introduce a bill in 1895 which provided that:

Whereas the industrial education of women in household art is of national importance and is a potent element of the labor problem; and

Whereas a complete presentation of best methods and appliances in household arts would tend toward a solution of the labor department:

Be it enacted, That in connection with an exhibit already undertaken by the Government a special department shall be provided for making an effective presentation of the best methods and appliances in domestic art.

A second measure concerning domestic art was introduced in 1896, but no hearings were held.

Another element in the pressure exerted for the establishment of a separate bureau was a resolution approved by the Farmer's National Congress at their convention in 1897. This resolution stated that:

Whereas the ultimate object of agriculture is the production of food for mankind;

Whereas that object fails in the most essential point if the food which is produced with skill is ruined in preparation through ignorance: Therefore be it

Resolved, That we, the National Farmer's Congress, use our active influence and effort toward establishing a bureau of domestic science in the Department of Agriculture of Washington and in the various State agricultural fairs, colleges, and institutes throughout the nation, where best methods and appliances for the preparation of food may be presented in connection with best methods and appliances for its production.

The National Grange, Patrons of Husbandry, the National Pure Food Association, and the Women's Christian Temperance Union favored the measure also.

The bill, however, was not reported out, and in lieu of the measure an amendment was proposed to the agricultural appropriation bill which added $10,000 to the amount appropriated for nutrition investigations being carried on at that time by Dr. Atwater. This alternative proposal came about as a result of the recommendation by the Secretary of Agriculture who stated that "the practicable and desirable way of carrying out the purposes of the bill would be through the insertion of a clause in the agricultural appropriation bill." He suggested the insertion of a proviso to read:

> For nutrition investigations: . . . . $25,000: Provided, That $10,000 of this sum shall be expended for investigations and reports upon best methods and appliances for the preparation of food, with a view to advancing the interests of domestic science and to securing useful information for distribution in the homes of the people.

A study of the appropriations made for nutrition investigations reveals that this increase was not authorized and it is apparent that the amendment was also stricken out. Home economics work thus had to wait twenty-four years before it was given bureau status, even though the scope of its activities was broadened considerably from 1900 to 1923.—PAUL V. BETTERS, *Institute for Government Research, The Brookings Institution, Washington, D. C.*

EDITORIAL

The Denver Meeting, June 24 to 28. The setting of the stage for a memorable annual meeting of the American Home Economics Association is rapidly nearing completion under the direction of the program committee and of Mrs. Kinyon and her helpers in local arrangements. Registration will begin at noon on Tuesday, June 24, in the Cosmopolitan Hotel, Association headquarters, and an information desk will be conveniently located near by. The first general session will be the public one on Tuesday evening, but general sight-seeing trips will be arranged on Monday for early arrivals and visits to places of special professional interest on Tuesday forenoon and afternoon. The last general gathering of the Association will be at the annual banquet Friday evening, but it is expected that many will stay over for trips on Saturday. Further information regarding arrangements, meetings, special luncheons and dinners, and trips will be found in the *Bulletins* sent to members in January, April, and late in May.

General Session. At the opening session on Tuesday evening the public is invited to attend. It, and the one on Wednesday evening, will be held in the theater adjoining Association headquarters in the Cosmopolitan Hotel. Mrs. Kinyon, chairman of committee on local arrangements, will be in the chair. Dr. A. L. Threlkeld, superintendent of schools in Denver and a staunch friend of progressive home economics, will most fittingly welcome the Association to Denver, and Dean Margaret Justin, president of the Association, will reply, speaking on the subject "Overtones." It is hoped that a member of the planning committee of the White House Conference on Child Health and Protection will also address the meeting and bring out the general purposes of the Conference and its relations to home and family life and to home economics.

A more informal discussion of home economics in connection with the White House Conference is being arranged for a special general session to follow the regular business session of the Association on Tuesday morning; arrangements for the special session are in charge of Dr. Louise Stanley, who is active in the education section of the Conference as chairman of the subcommittee on the family and parental education.

The public is again invited to the general session on Wednesday evening.

Sessions of Divisions and Departments. Pending formal reorganization of the Association, its program of work and meetings is being built up around what, for lack of better names, are referred to as four subject matter divisions and nine professional departments. Provision is made for each to have two special sessions (including whatever time is needed for a business meeting), but joint meetings between groups with allied interests are arranged whenever possible. The plans for all of these sessions are not yet complete, but some of those already decided on are briefly mentioned beyond.

Meetings of professional departments are scheduled for Wednesday afternoon and Friday morning; and those of subject-matter divisions, for Thursday morning and Friday afternoon; formal business is to be transacted at morning sessions so that the more generally interesting discussions may come in the afternoons when home economics students from neighboring colleges can more conveniently attend. All these groups will meet in the Cosmopolitan Hotel or in convenient quarters near by.

The division of the family will hold a meeting on Friday afternoon, at which the general subject of the week, "The Modern Family and Its Home," will underlie the special topics. "The Money Cost of Children" will be discussed by Mrs. Chase Going Woodhouse; "The Time Cost of Children," by Miss Hildegarde Kneeland and Miss Maude Wilson; and "Home Management in Relation to Child Development," by Miss Ruth Lindquist.

The division of textiles and clothing plans to devote one session largely to textile research, and at the other to have Miss Grace Denny speak on "Collecting Historic Textiles." This section is also planning an exhibit of educational materials from schools and colleges assembled under the direction of Mrs. Hess of Kansas State Agricultural College.

The division on the house (a new but extremely important group) is planning to have two decidedly significant subjects presented and discussed on Thursday morning: "The Housing Problem: Recent Urban and Rural Trends" and "Equipping and Furnishing the House, with Special Reference to Care and Administration." It is a pleasant coincidence that the National Conference on City Planning will be in session at Denver during the week of the home economics meetings; its program and exhibit, to which home economists will be welcome, will undoubtedly suggest various points and ways by which the two groups can be mutually helpful.

The department of higher education in home economics will devote its Wednesday afternoon session to a discussion of "The Modern Teacher and

Her Training for the Modern Family and Its Home." Miss Cora Winchell will be the leader; Miss Rose Shonka will speak from the point of view of the city supervisors; Miss Frances Zuill, from that of the teacher trainer; after which there will be "free for all" exchange of ideas, and a summary presented by a reviewing committee. At the business session on Thursday morning, studies conducted by the department will be included in the reports presented.

The extension department reports that high points in its program will be a paper on "Trends in Extension" by Dr. C. B. Warburton, director of extension in the United States Department of Agriculture; a discussion of child development and parental education in relation to extension by Miss Flora Thurston; a paper on "Planning Budgets for Farm Families" by Dr. Faith Williams; and a discussion of extension work as shown in the Land-Grant College Survey.

The institution economics department has arranged the following program for its meeting Wednesday afternoon: "The Restaurant of Today," "Electric Equipment for Institutions," "An Activity Analysis of Institution Economics," and "Land Marks in Institution Economics" by Miss Effie Raitt. The committee reports to be presented at the business session on Friday will reflect the year-round activities of this group.

The research department has chosen as the general subject of its meeting on Wednesday afternoon "The Improvement of Research in Home Economics." Topics listed for discussion then are: "The Training of of Research Worker in Home Economics," "The Selection of the Research Problem in Home Economics," and "A Tool of Research—the Use of Statistics in Home Economics." On Friday morning the department will be divided into several round-table groups, at which research projects in different fields of home economics will be discussed with members of corresponding subject-matter divisions. Subjects and leaders of these round-table discussions will be: textiles, Mrs. Pauline Beery Mack; food and nutrition, Miss Esther Davies; the family, Miss Anna E. Richardson; the home, Miss Hildegarde Kneeland.

The temporary department of child development and parental education will hold no separate meeting on Wednesday afternoon, but will join in discussions of various aspects of its problems at the meetings of the extension, social service, and homemakers departments. The business session on Friday morning will be devoted to plans for more permanent organization.

The members of the American Home Economics Association who are interested in the application of home economics in social welfare work

and who are now grouped in the tentative social service department, will so many of them be in Boston for the meetings of the home economics division of the National Conference of Social Welfare, June 7 to 14, that they have decided to hold the annual business session in Boston rather than in Denver. At Denver the group will arrange a special social work program for Thursday morning.

Council Meetings. Council members, whose time is naturally more filled than that of their colleagues less honored with Association responsibilities, will find their schedule lengthened at both ends, the first Council meeting coming at two o'clock on Tuesday afternoon and the last at nine on Saturday morning. Now that the Council has been enlarged and strengthened by including two representatives from each affiliated association and that the election of Association officers has been added to its functions, its meetings will be more than ever important. As heretofore, all members of the Association are welcome to be present and join in discussions at sessions of the Council, but only formally accredited councilors will vote. Councilors please note that this means presenting credentials and obtaining badges before the Tuesday afternoon meeting.

The Student Club Program at Denver. The program for representatives of students clubs and their advisers at an annual meeting of the American Home Economics Association involves so many special interests that it seems to deserve a special editorial. For one thing, it is complicated by the fact that it includes two more or less distinct parts, one concerned with high school and the other, with college clubs. For another, the girls naturally enjoy keeping more closely together than, say, the members of the homemakers division, so that special group meetings and meals are more numerous in their schedule. They enjoy the distinction of being the only group for whom a special social function (usually a tea at which they may meet the members of the executive committee) is regularly included on the official program.

The Denver committee on arrangements announces that quarters for the student club group are available at the Cosmopolitan Hotel and the Brown Hotel. Both hotels are offering several rooms with private bath, in each of which eight persons will be accommodated in single beds at $2.00 a person a day. Student club members expecting to attend the Association meeting and wishing such accommodations, are advised to make reservations at once.

The first meeting of the group is set on Wednesday afternoon. The delegates will be welcomed by a girl from the Denver High School, a representative of a New England high school club will respond, and Dr. Margaret Justin will greet them in behalf of the American Home Economics Association. Then there will be 5-minute reports by a college and a high school club representative from each region. Following this meeting will come the tea arranged by the Association, and at six o'clock a dinner, at which the local clubs will probably provide characteristic diversions.

The Thursday morning session is expected to begin with a talk by Miss Agnes Donham on the topic "Myself, Incorporated," and after that the college and high school representatives will separate to discuss their respective problems.

Friday starts off with a breakfast, at which Miss Lita Bane will talk on "The Philosophy of Home Economics as I See It." During the forenoon there will be a joint program by high school and college delegates and the annual business meeting.

There are many reasons why the Association welcomes student club members to its meetings. It recognizes that they represent the future leaders in home economics; it realizes that its own work is strengthened by closer contact with the girls whom present-day home economics is trying to reach in school and college; and it hopes that the time which the girls thus spend with the active workers in home economics will help them to catch something of the professional spirit needed by the members of this or any other profession if, individually and collectively, they are to attain full strength and usefulness.

Greetings from Colorado and Utah. This message to readers of the JOURNAL OF HOME ECONOMICS reflects the spirit of those who are to be the hostesses of the Association at Denver:

> Under the able guidance of Mrs. Kinyon, Colorado home economists and student club members are preparing a hearty welcome for our guests in June. By guests we mean not only distinguished members of the American Home Economics Association but also the newest, youngest club members. Miss Blodgett by her active service has filled all club members with enthusiasm not only to meet fellow club members but to see and hear the women whose books and articles they have read.

The Utah Home Economics Association also sends its special greetings to home economists who plan to come to the Denver meeting and stands ready to be of assistance in case they can include Utah in their itinerary going or coming:

The president of the Utah Association, Mrs. Christine B. Clayton, and other members of the executive committee extend a cordial invitation to home economics teachers and their friends to visit Salt Lake City and Utah Scenic Wonders on their way to or from the Denver meeting. Excursion rates make this possible without additional cost.

An information bureau will be maintained at the Hotel Utah by the Utah Home Economics Association for two or three days before and after the Denver meetings.

For further information, including free literature from railroads, transportation companies, and the Salt Lake City Chamber of Commerce, address Jean Cox, publicity chairman of the Utah Home Economics Association, State Capitol, Salt Lake City, Utah. General information regarding auto routes was given in the April *Bulletin* and may be supplemented on inquiry to the American Automobile Association, Hotel Utah, Salt Lake City.

Home Economics at the Atlantic City Meetings. The third national conference of supervisors and teachers of home economics was held at the Hotel Chelsea on Monday, Tuesday, and Wednesday of the week of February 22 to 27, during which the Department of Superintendence of the National Education Association was in session at Atlantic City. The chairman was Miss Agnes Houston Craig, supervisor of home economics in Springfield, Massachusetts, who also heads the corresponding group in the American Home Economics Association. Associated with her as secretary was Miss Emeline S. Whitcomb, specialist in home economics, United States Office of Education, and a local committee headed by Miss Ethel M. Powell of Atlantic City.

At the opening session, on Monday afternoon, Miss Helen Goodspeed presided, and the central theme was research as an aid to home economics education. Papers or reports were presented by Dr. Elizabeth L. Woods of Los Angeles, Dr. L. Thomas Hopkins of Teachers College, Columbia University, Miss Whitcomb, and Mrs. Annie Roberston Dyer.

On Tuesday morning the discussion centered around child development and parental education, with Miss Alice Rebecca Wallin of Highland Park, Michigan, in the chair. Dr. H. E. Barnard, director of the White House Conference on Child Health and Protection, spoke on "The Rôle of the School in the Health Education of the Child." In a discussion of "The Contribution of the Preschool Education to Child Health and Protection," Dr. Carleton Washburne of Winnetka, Illinois, represented the standpoint of the superintendent of schools; Miss Marguerite C. Daly, Paterson, New Jersey, Miss Sarah H. Bullard, Buffalo, New York, Miss Ada Z. Fish, Philadelphia, and Miss Charlotte Keen, Detroit, that of the classroom teacher; and Dr. Ruth Andrus of Albany, that of the state director of child welfare.

The business meetings of the group were especially important because they included the formation of a permanent organization and a definite program of work. The constitution adopted, was drawn up to make possible the acceptance of the group by the National Education Association as one of its constituent departments, and it is hoped that at the July meeting of the National Education Association the application for such membership will be officially accepted. Thereafter, the group will be entitled to hold meetings as part of the regular program of the National Education Association and to enjoy other privileges as do the present departments of secondary school principals, rural education, and others. The group has been working toward this for several years, and its success should do much to strengthen the standing of home economics in the public schools. When in the pending reorganization of the American Home Ecomonics Association an equally satisfactory place is found for public school supervisors and teachers, this important group should be in a position to press forward yet more effectively in the cause of home economics in our schools.

The officers elected at Atlantic City were: chairman, Miss Emma Jacobs, director of domestic science, Washington, D. C.; vice-chairman, Miss Helen C. Goodspeed, assistant to the director of home economics, Philadelphia; secretary-treasurer, Miss Mary Buckley, director of domestic science, Patterson, New Jersey.

It augurs well for the success of the about-to-be-established department that its program of work for the coming year is drawn up as the first part of a long-time program and that it calls for systematic research in the field of home economics education in the public schools. It was partly with this in mind that the JOURNAL OF HOME ECONOMICS asked permission to publish the paper which appears on page 358 of this issue and in which Dr. Hopkins discusses the function of research in public school home economics.

The banquet on Monday evening was a less serious but very enjoyable feature of the meetings. The toastmistress, Miss Craig, presented Miss Whitcomb with a life membership in the National Education Association as an expression of the gratitude which the group felt for her untiring services. Miss Whitcomb, to whom the presentation seemed a complete surprise, modestly and gracefully passed the compliment to the Office of Education, with which she has been connected since 1922. Thereupon, her chief, Commissioner Cooper, in a neatly-turned little speech, said pleasant things about Miss Whitcomb, the Office, and the home economists. The main speech of the evening was by Dean William F. Russell

of Teachers College, Columbia University, who discussed some of the present problems of teacher training. Later a letter from Miss Harley (see beyond) was read, a few old friends were asked to say how-do-you-do, and the meeting broke up for informal conversation.

The First Foreign Fellow of the American Home Economics Association. Thanks to the generosity of Miss Winnifred Thorpe of Boston, the American Home Economics Association has this winter been the recipient of a sum of money sufficient to bring to this country for three months' study Miss Phyllis Harley, a graduate of Somerville College, Oxford, who has for some years being doing an important piece of work among women university students in Bombay, India. It was her wish to see home economics in operation in typical situations in the United States in order to judge what of its subject matter and methods could be adapted to the Indian situation with which she has to deal.

The gift was secured through the international committee of the Association, or more correctly, through its subcommittee on foreign students and scholarships, of which Miss Mary Lindsley is chairman. Miss Lindsley's committee also received and passed upon the application of Miss Harley, requested the permission of the Association to appoint her, and arranged her trip through the United States.

At the time of her appointment, Miss Harley was on a year's leave from Bombay, most of which she had spent in England. She arrived in New York early in February and is to sail from San Francisco to Ceylon in May. Her itinerary is roughly as follows: Washington, Baltimore, New York, Boston, Ithaca (Cornell), Detroit (Merrill-Palmer School), Chicago, Minneapolis (University of Minnesota), Manhattan (Kansas State Agricultural College), Ames (Iowa State College), Los Angeles, Long Branch, and San Francisco. In each place she has been received by members of the American Home Economics Association and arrangements have been made for her to see the work in home economics or other lines which seemed most likely to serve her purpose.

Miss Harley is a woman of fine training, broad sympatheties and experience, exceptional vitality and charm of manner, and has made friends wherever she has been. Her illustrated talks on conditions in India, with special reference to the problems of its educated women and their place in the modern social order, have given real pleasure and enlarged the international vision of the home economics groups so fortunate as to have had her with them.

It was characteristic of her to seize the one occasion during her stay in

the United States on which there would be a nationally representative meeting of home economists to express to them her sense of what the Association was doing for her. At the home economics banquet in Atlantic City on February 24, there was read a letter in which she tried to give her unseen American friends some idea of what she was trying to accomplish:

I do wish to thank the Association most sincerely for the wonderful opportunity that has been granted to me and for the delightful reception that I have received from so many of the Association in Washington, Baltimore, New York, and at Vassar College, to mention only the places that I have so far visited. It is the sort of experience for which I cannot be adequately grateful, and I hope I may make good use of all that has opened out before me. I am sorry that I could not accept the invitation that was extended to me to attend your conference.

I represent the University Settlement, Bombay, India, an institution where young educated Indian women reside while studying for their degrees in arts, medicine, or education. We have been working for thirty-seven years in Bombay, promoting intercommunal and interreligious sympathy and understanding with Christian influence and ideals, tutoring and guiding young girls faced with the baffling complexities of city life, and faced, too, with a western civilization that conflicts in many ways with their background of philosophical and religious thought as well as of social custom. We have wide contacts with Indian women and entrance to many homes and opportunities for working on committees in the city with Indian women who are striving for betterment in social and educational matters. We also have classes to which young girls or married women come who do not want to study for an academic degree but who wish to learn English and other subjects. This is just a very short sketch of our work so that I may go on to say where I think home economics will help us.

I hope firstly to make use of all that I am learning in our own students' institution; secondly, I want to try to arouse Indian women to take an interest in this whole movement and new attitude to domestic science. I want, if possible, for an Indian girl to come over and study such things as the scientific background of nutrition. This girl should be in close personal contact with some wise and trained westerner as supervisor of her studies who should have been to India with a scholarship similar to mine, surveying some part of the field. I could throw out many ideas as to interesting fields of study for such a fellow in India, for instance, the study of vegetarian food in a tropical country. All of these things should be studied in relation to some fundamental scientific principles, not with a view to bringing western implements and equipment, but with a view to finding out what is true and what false in an already existing culture and standard of living.

There is a tremendous amount to be done, and I realize that home economics carried out on an Indian plan would be the salvation of the country—that country which has so much to offer in the religious and philosophical spheres and which, out of spiritual conviction, places, as we think, all too little emphasis on physical well-being. I have during my short stay in the United States tried to penetrate into the philosophy of home economics, and I find that amongst many the aim is so to free the individual from the drudgery of home life and so to raise the standard of living that there will be

more freedom to develop a religious and spiritual sense. Just in so far as home economics means that desire for uplift, just so far will it have a message for India. May we of the West not take this to heart and see to it that our new movement of home economics may have a world-wide outlook and usefulness?

With this introduction to Miss Harley, home economists will all look forward to the report which she will make to the Association when she has finished her stay in the United States and to what she will write later for the JOURNAL. Her visit to the United States under such auspices is sure to widen our conception of international fellowship and cooperation in home economics.

The Social Value of Music. The music division of the National Federation of Settlements and the Welfare Council of New York City have recently cooperated in an extensive study of music in 38 settlements of that city. The results definitely confirm the common but hitherto vague belief that music not only provides esthetic satisfaction for the individual, but also promotes neighborliness and good citizenship.

Mrs. Frances McElwee McFarland, a director of the Federation, used the study as the basis of an address which she recently delivered before the Music Supervisors' National Conference, and in which she brought out several points of interest to others besides musicians and New Yorkers.

For example, it is worth noting that the idea of a music school in a settlement originated at Hull House in Chicago, and the chorus work there is said to be still the model for such schools throughout America. The idea has spread until more than 170 settlements in our principal cities now have non-profit-making music schools or departments or organized social music. In fact, many social workers look forward to the time when music will be a recognized department in the work of every settlement. The aim of such work is not primarily to discover exceptional talent but to make music a part of life experience among all whom it reaches.

Among the pupils of the music schools in the settlements of New York City, forty-one nationalities were found to be represented, with Jews predominating and Italians second. In the Brooklyn Music School Settlement alone were pupils from thirty-one nationalities, while one orchestra on the East Side of Manhattan numbered twenty. The study proved, said Mrs. McFarland, "that music has a universality of appeal which makes it possible to bring together all the divergent elements of the most polyglot neighborhood and to weld them into some unity."

The popularity of the piano among musical instruments was strikingly brought out in the study, 1,400 out of 3,400 pupils preferring it. On this point Mrs. McFarland makes the following comment:

From the professional point of view there are far too many pianists in America today and so the Music School Settlements have no intention of adding to the list, except in the case of outstanding genius, but some knowledge of the piano is important as the basis of a musical education for everyone, regardless of the branch of music or instrument in which one wishes to specialize. There is, however, a wider range of opportunity both for the amateur and professional players of other instruments, such as viola, cello, and wood winds.

She also called attention to the way in which commercial interests are seizing upon the universal appeal of music, to which radio programs give eloquent witness, and which is also shown by the use made of music as an aid to industrial efficiency.

The social values of the movement are thus summarized:

The settlement music schools are providing a first class music education to thousands of children and young people in the crowded districts at a price within their means. Some have already been equipped for artistic career—many for a means of livelihood,—and all for an appreciation of music and self expression which would otherwise be denied them. At the same time it is clear in the experience of New York's settlements that music is bridging the gap between children and parents who have little else in common; it is making friends of peoples from all parts of the world who, though they have been living next door to each other, have not even been neighbors in the real sense of the word; and it is helping to make better citizens not only of the rising generation but of their parents.

Since the study in question has shown definitely that music makes for better family relationships and better relations between the home and the community, it is one for which home economists as well as musicians and social workers have reason to be grateful.

"Read the Label" Clubs. That the success of the government's efforts to protect the consuming public depends on the intelligent cooperation of that public, was the point brought out in a recent radio talk by Mr. W. R. M. Wharton, chief of the eastern district of the Food, Drug, and Insecticide Administration. He even suggested that to drive home this responsibility in regard to pure foods and drugs the housewives of the country form "read the label" committees in their clubs:

Pledge the members of your clubs to read labels and to apply the principles of economics to the information obtained by label reading. If we could develop a widespread movement for intelligent label reading in this country, and for the intelligent application of the information obtained by label reading, the consumers of the Nation would save millions of dollars a year, and the cause of truthful labeling of foods would be promoted more effectively than in any other way.

The Federal Food and Drugs Act operates in your interest, Mr. and Mrs. Consumer, to protect your food supply, to prevent the sale to you of poisonous or deleterious, or adulterated or misbranded foods and drugs. The Federal Government has had the closest cooperation of city and State food and drug control departments. It has had the whole-hearted and effective cooperation of reputable manufacturers in the food and drugs trades, but it has not had complete cooperation of those most vitally interested —the consuming public.

The consuming public can cooperate to insure honesty of labeling of foods and drugs by reading labels—by reading labels intelligently and by insisting on being supplied with the exact commodity desired.

Mr. Wharton's central ideal will meet the hearty approval of home economists interested in the education as well as the protection of the consumer, and his suggestion may prove helpful in schools and in club and study groups.

Malted Milk Powders: Correction of Vitamin Values. The authors of the article "The Vitamin A, B, and G content of Malted Milk" which appeared on pages 123 to 128 of the February JOURNAL ask readers to note the following corrections:

On pages 124, line 2, the figure 45 should be changed to 4.5; on page 126, line 12, the figure 25 changed to 2.5 and in line 16, the figure 20 changed to 2.0; on page 128, line 7, the figure 20 changed to 2.0 and in lines 26 and 27, the figures 45, 20, 25, and 20 changed respectively to 4.5, 2.0, 2.5, and 2.0. In other words, the approximate vitamin value of the two samples of malted milk powders should be stated as follows: vitamin A, 4.5 units per gram; vitamin B (B_1), 2.0 to 2.5 units per gram; vitamin G (B_2), 2.0 units per gram.

RESEARCH

STUDIES IN DISHWASHING METHODS: AN ATTEMPT TO APPLY METHODS OF JOB ANALYSIS TO A HOUSEHOLD PROCESS[1]

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It is a commonplace that there are two effective means of reducing drudgery: one is to do each job under conditions of least waste, taking advantage of space-saving arrangements, time-saving methods, and effort-saving equipment; the second is to eliminate the job itself. The former may require money. The latter will require either money or an open mind, depending upon the avenue of elimination, that is, whether the job is relegated to a paid worker, to an outside agency, or to oblivion. In the final analysis, the most effective solution for the form of household drudgery here considered is probably destroying the soiled dishes (as when paper ones are used) rather than "creating values" in restoring them to a usable state. The power of tradition and pride of possession will no doubt long serve to block this method of escape, and even it would still leave open the problem of the obnoxious pots and pans.

There are, it is agreed, patent "limitations of scientific management in household work" as Miss Kneeland has so aptly indicated (1). This, however, need not preclude the possibility of applying with profit the analytical approach to the "300 plus" processes that are still by economic force a part of the American home.

In the attempt to discover conditions of least waste in household processes, the junior author in 1927 undertook the problem of applying methods of industrial job analysis to dishwashing. The Taylor system was used to analyze present practice and to arrive at the synthesized practice of least waste. Emerson's (2) Principles of Efficiency 9, 10, and 11—Standard Conditions, Standard Operations, and Standard Practice—were applied to set controls.

[1] Based on the thesis submitted by N. Maude Vedder for the degree of master of arts, University of Chicago, 1929.

Job Analysis and Setting up of Standards. Briefly, the Taylor system consists of scrutinizing present practice; recording time required for the performance; analyzing the job and dividing it into its essential processes; subjecting each process in its smallest practicable unit to a time and motion study to determine where waste motion might be eliminated, steps cut, and time saved. The one best method under existing conditions is thus found. After improving the performance by deleting all unnecessary operations and re-routing related areas to save steps, a new method of synthesized factors is set up that should lead to improvement. The synthesized practice is then subjected to analysis for more intensive study until no further improvement can be found. The ultimate is the synthesized practice of least waste.

The problem of determining what is present practice in dishwashing involved the speculative question of standards. As almost every home is a rule unto itself, the following standard conditions were set.

TABLE 1

Pieces of china, glassware, and silver required for standard meals

MEAL	CHINA	GLASSWARE	SILVER	TOTAL PIECES
Breakfast	26	6	14	46
Luncheon	21	4	18	43
Dinner	28	5	19	52
Total for day	75	15	51	141

The census family of 4.3 persons became a family of three adults and a growing child. Accepting the estimate that 85 per cent of the American homes are without paid service and discounting (to reduce variables) the possibility of ideal family cooperation, the mother was regarded as performing all operations unaided. Three "typical" meals were set up, affording dishwashing difficulties but meeting home economics standards as to nutritive requirements and as to dignity and simplicity of service. Convenience was given precedence over convention wherever a standard had to be set; this led to the use of a tea cart and skillful, unobtrusive scraping and stacking of dishes between courses by the mother who remained seated at the table during the entire meal. Piped hot and cold water, suitable working heights, adequate light and ventilation, right to left routing, and available electricity were assumed.

The standard meals set up were as follows: *Breakfast*: stewed fruit, cooked cereals, egg, buttered toast for all, water and coffee for adults,

milk and orange juice for child; *luncheon*: a baked meat substitute, buttered green vegetable, bread and butter, water and cocoa for all, a dessert of berries (with seeds); *dinner*: mutton (with fat), potato, second vegetable, salad, bread and butter, water and coffee for adults, water and milk for child, baked fruit dessert.

China, glassware, and silver requirements for the service of meals under the standard set up are shown in table 1. This service provided at breakfast separate dishes for fruit and cereal placed successively on the same small under-plate, with a heated larger plate for the hot food that followed. The service for subsequent meals is obvious. Individual bread-and-butter plates were omitted throughout. All food was served at the table from suitable bowls or platters with the necessary silver.

ANALYSIS I. PRESENT PRACTICE: STANDARD OPERATIONS PERFORMED BY HAND THREE TIMES A DAY

Preliminary Studies. The difficulties in attempting to set up standard operations may be noted from a preliminary survey made in the neighborhood of the University of Chicago for the "usual" method of dishwashing. Of the 100 persons interviewed, 52 per cent scraped the dishes; 31 per cent scraped and rinsed; and 17 per cent rinsed only. Fifty-five per cent used cake soap; 19 per cent, soap flakes; 14 per cent, a combination of the two; and 12 per cent, no cleansing agent other than water. Seventy-seven per cent used a dish cloth; 13 per cent, a mop; 9 per cent, a combination of the two; and 1 per cent, neither. Sixty-nine per cent used a wire basket for draining; 19 per cent, a pan; 12 per cent, the drain-board only. Seventy-six per cent used the hot tap water for final rinse; 23 per cent, water from the teakettle; 1 per cent, a hot water spray. Sixty-nine per cent towel-dried all equipment; 9 per cent allowed all to air-dry; 22 per cent towel-dried glasses and silver but allowed dishes to air-dry.

A preliminary study was made, comparing sudsing time and effectiveness with cake soap and soap flakes. In spite of the preference for cake soap shown in the survey, soap flakes were used in this investigation. In testing 6 popularly used bar soaps and 5 brands of soap flakes, the average cost for making a standard suds was found almost indentical, the average cost per sudsing unit being $0.00499 for soap and $0.00403 for flakes. A 76 per cent saving of time was effected by using flakes, the average for standard suds being 82 seconds for soap and 19.5 for flakes.

From another preliminary study, dealing with the relative effectiveness of various shapes and types of dish drainers, it was found that the time

saved by using one or another type was negligible. The round type has the advantage of permitting more and easier stacking and for this reason was adopted for this investigation.

Method and Procedure. Where does the dishwashing job begin? Obviously the time and motions required to wash dishes will be influenced by preliminary treatment given them and by the point at which the job is considered ended. In this investigation the job was taken as beginning with the scraping and stacking, which for the ease and convenience of the mother, was done at the table. It was considered as ended when the clean dishes were placed where they were to remain until used

The problem of pots and pans and the general "straightening up" of the kitchen introduced too many variables to be included as a part of this study.

The units for analysis of present practice thus became: (1) scraping and stacking, (2) cold rinsing, (3) washing, (4) scald rinsing, (5) towel drying, (6) cupboard storing.

In accordance with the standard conditions previously set, procedures for the units were then defined as follows:

Unit 1. Dishes scraped and stacked at table; cleared from table to tea cart.

Unit 2. Removed from tea cart to sink; rinsed in stacks in running stream of water.

Unit I, 3. Hand-washed after each meal, using round pan, hot tap water (range 113° to 123°F.), dish cloth, soap flakes. Stacked to drain in round wire drain to left of pan.

Unit I, 4. Scald-rinsed with boiling teakettle water (for ease of drying and bacteriological cleanliness).

Unit I, 5. Towel-dried and arranged in groups on tea cart for storage.

Unit I, 6. Lifted by arranged groups; stored in dining room closed cupboard.

A work sheet or process chart was made, indicating the chronological order and method to be used for each stage of each unit.

The dining table was set with the equipment indicated. The required food was prepared and served so that typical scraps and deposits were left on china, glassware, and silver. To approximate home conditions, a waiting period of thirty minutes was allowed to elapse before soiled dishes were taken to the sink. Each unit was then subjected to a time and motion analysis.

Of all the available methods of making time and motion analyses, the micro-motion (3) and the chrono-cycle-graph methods are without question the most precise, eliminating all possibility for error and bias. Lacking these, stop-watch timing under carefully controlled conditions and

accurate motion counting by a trained observer together qualify as a substitute measure. The latter was of necessity the method used in the present study.

After a preliminary practice and warming-up period by the worker, the units were performed five times, and the average results were used for final comparisons unless a check was arrived at sooner. Beyond five performances, the worker showed evidence of fatigue with an accompanying increase in either time or motions or both. Simultaneous movements and short-cut methods were used wherever compatible with the conditions set for the analysis in question.

Results. For the "average" family and "usual" method under the conditions set up in this study, the six units of operation analyzed show a total of 1,954 motions, requiring 38 minutes, 8 seconds.

Analyzing the units as performed in this study to discover unnecessary operations, the units resolve themselves into three groups.

Units 1 and 2 represent the irreducible minimum. For the mother to remove each course separately and scrape the dishes in the kitchen, as is usually done in the absence of a tea cart, would materially increase Unit 1. Some reduction might be made by having each member remove his own implements cafeteria fashion, but this could scarcely be set up as acceptable standard practice. Because waste motion in Unit 2 was forestalled in Unit 1, and rinsing was done with staked rather than with individual dishes, the procedure followed in Unit 2 is also taken to represent conditions of least waste. The totals for these two units, 463 motions in 10 minutes, 29 seconds, was regarded as "standard practice" in the subsequent studies.

Units 3 and 4, requiring 767 motions and 15 minutes, 20 seconds, may be grouped as essential processes, but subject to improvement in operation.

Scrutinizing for purposes of further study the results of Units 5 and 6, requiring 724 motions and 12 minutes, 19 seconds, these may be grouped and qualified as *nonessential* or questionable processes and as subject to improvement.

The average figures for motions and time required in connection with each meal, for the individual units, for the three groups of processes described, together with the totals for the day, are shown in table 2.

Units 1 and 2, having been accepted as standard practice, the essential processes (Units 3 and 4, washing and scalding) were next analyzed in the attempt to arrive at the one best method under existing conditions. It appeared likely that the 767 motions and 15 minutes, 20 seconds might be cut by substituting the recommended standard of industry, that is, re-

placing broken, interrupted processes by rhythmic, repeated ones. This would mean washing the dishes for the three meals at a single, unbroken period. There would be an obvious saving in the preliminary preparation of equipment and in the water-heating processes. If tap water were available at a temperature range of 160° to 180°F., Unit 4 (96 motions and 2 minutes, 30 seconds) could be considerably reduced. A different

TABLE 2

Average number of motions and time required for various units and groups of operations in washing breakfast, luncheon, and dinner dishes for a family of four, according to present practice (I)

UNITS AND GROUPS OF OPERATIONS	BREAKFAST			LUNCHEON			DINNER			TOTAL FOR DAY		
	Motions	Time		Motions	Time		Motions	Time		Motions	Time	
		min.	*sec.*		*min.*	*sec.*		*min.*	*sec.*		*min.*	*sec.*
Preliminary Processes: (Standard Practice)												
Unit 1: Scraping, stacking, clearing to tea cart	135	3	05	121	2	49	140	3	27	396	9	21
Unit 2: Removing to sink, rinsing in stacks	24		24	21		22	22		22	67	1	08
Total of 1 and 2	159	3	29	142	3	11	162	3	49	463	10	29
Essential Processes:												
Unit 3: Hand washing	259	4	54	202	3	51	210	4	05	671	12	50
Unit 4: Rinsing in teakettle water	32		50	32		50	32		50	96	2	30
Total of 3 and 4	291	5	44	234	4	41	242	4	55	767	15	20
Questionable processes												
Unit 5: Towel-drying grouping on tea cart	193	3	29	185	2	57	204	3	25	582	9	51
Unit 6: Storage by groups	49		52	48		48	45		48	142	2	28
Total of 5 and 6	242	4	21	233	3	45	249	4	13	724	12	19
Total of 1 to 4	450	9	13	376	7	52	404	8	44	1230	25	49
Total of 1 to 6	692	13	34	609	11	37	653	12	57	1954	38	08

selection of equipment such as a dish mop or brush or a running stream of wash water with no pan might effect a saving or, if this were objected to, an oval pan of suitable proportions might permit greater freedom and, hence, greater speed both in stacking into the pan and in washing.

As to the *nonessential processes* (Units 5 and 6, drying and storage), it appeared that towel-drying could be entirely replaced by air-drying, thus saving the 582 motions and 9 minutes, 51 seconds of Unit 5. Also,

if glassware and silver must be wiped, short-cut methods should be investigated. Although storage time and motions were reduced to the minimum under the conditions set by group stacking and lifting, plus the use of a tea cart, cupboard storage might be eliminated entirely for "ordinary dishes" and some form of convenience storage, governed by anticipated use, might reduce the 142 motions and 2 minutes, 28 seconds for Unit 6.

ANALYSIS II. SYNTHESIZED PRACTICE: STANDARD OPERATIONS, MODIFIED AND PERFORMED BY HAND ONCE A DAY

The "present practice" followed in the tests already described was modified as suggested by the results reached, and further tests were made according to what was termed "synthesized practice." Units 1 and 2 (standard practice) were followed as in the earlier work, but various changes were introduced in Units 3, 4, 5, and 6; to avoid confusion, the revised units are designated as II, 3; II, 4; II, 5; and II, 6.

The principal changes were washing dishes for all three meals at one time; allowing them to dry in the air instead of being wiped by towel; and adopting what was designated "convenience storage" in the place of group storage in a cupboard.

It was assumed that in actual practice, luncheon and dinner dishes would be kept for washing with next day's breakfast dishes; that, as a concession to the "tidy" kitchen tradition, the luncheon and dinner dishes would be stacked and stored in the oven; and that the silver would "clean itself" by being allowed to soak in water and a cleaning preparation in the largest utensil used in the preparation of the meal in question. The units of work were modified to conform with these assumptions.

"Convenience storage" as understood in this study covered separating out the dishes needed for luncheon as the drainers were being unloaded, storing bowls and platters on an open shelf near the stove, and stacking the remainder on the tea cart from which they were cupboard-stored as under "present practice."

The units under "synthesized practice" (exclusive of 1 and 2 for which conditions were assumed to be identical with those under "standard practice" and, therefore, not repeated) thus become:

Unit II, 3. Dinner and luncheon dishes rinsed, stacked, and stored in oven.

Unit II, 4. Dishes for 3 meals hand-washed in one period, following the same method as under "present practice," save that a second drainer was added.

Unit II, 5. Scald-rinsed with boiling teakettle water, air-dried.

Unit II, 6. Removed from drains for "convenience-storage."

The same (rather than more nearly ideal) control conditions were used for the washing and scalding units, II, 3 and II, 5, to get a direct comparison between the single operation of "synthesized practice" and the three operations of "present practice." Under some circumstances it is conceivable that the total daily requirement of china and glassware would be lower than the standard set for this investigation; then one drainer might suffice and convenience storage would consist in leaving the dishes in the drainer until needed, with probably a bi-weekly reassortment and cupboard storage.

Preliminary Studies. Since some housekeepers object to air-drying as a substitute for towel-drying of glassware and silver, the following studies were taken to investigate the possibility of substituting a short-cut method of towel-drying. Time and motion analyses were made of the handling of the 51 pieces of silver used for the three meals; first, when towel-dried by the ordinary method and grouped on the tea cart for storage; and second, when a substitute method was used which consisted of grasping the entire bundle of silver from the drainer basket, shaking it quickly, spreading out on arranged towels, bowls and tines up, with motions as few and as nearly simultaneous as possible, and covering the whole with a second towel, which was given several effective pats. The hand-drying method required 107 motions and 1 minute, 21 seconds; the hand-patting method required 64 motions and 46 seconds, representing a saving of 41 per cent of the motions and of 43 per cent of the time. From the appearance of the silver, it was impossible to distinguish the method used.

In washing glass tumblers, it was found that by omitting scald-rinsing and towel-drying, but substituting complete immersion of the glasses in boiling water and inverting them to drain on a wire tray, 78 per cent of 36 tumblers tested were absolutely clear and indistinguishable from towel-dried, and 22 per cent had vague white streaks, apparently from water deposits. Tumblers air-dried after scald-rinsing were less clear, though presumably not less sterile. The immersion method would apparently effect a saving of both motions and time without sacrificing the appearance of the glassware or germicidal efficiency.

Results. The six units as organized for the "synthesized practice" called for a daily total of 1,367 motions, requiring 31 minutes, 2 seconds, as compared with 1,954 motions, and 38 minutes, 8 seconds for "present practice." In other words, washing dishes once rather than three times a day and air-drying rather than towel-drying give a saving on the job of 587 motions, and 7 minutes, 6 seconds, or 30 per cent of motions and 19 per

cent of time. Average figures for each of the four units are shown in table 3.

The analytical method was again applied to the comparison between the individual units of "present practice" and "synthesized practice" to ascertain sources of waste and possibilities for further reduction. The figures on which this comparison was based are given in table 4. That table also gives the motions and time required for the units still further reduced as the result of this comparison (designated "recommended synthesis," II_b).

TABLE 3

Average motions and time required for various units of work in washing a day's dishes for a family of four, according to synthesized practice (II)

UNITS OF OPERATION	MOTIONS	TIME	
		min.	*sec.*
II, 3: Rinsing and stacking of all dishes, oven storage of luncheon and dinner dishes	140	3	22
II, 4: Handwashing of all dishes in 1 period	492	11	22
II, 5: Rinsing in teakettle water, air-drying	77	1	46
II, 6: Removing from drainer, convenience storage	195	4	03
Total, II, 3; II, 4; II, 5; II, 6	904	20	33
I, 1: Scraping, stacking, and clearing to tea cart	396	9	21
I, 2: Removing to sink, rinsing in stacks	67	1	08
Total for job	1367	31	02

Dishwashing once a day as contrasted with three times a day may seem at first glance to result in only a negligible saving. A study of the savings and loss as shown in table 4 will yield the explanation and indicate the means of further reduction, included under "recommended synthesis."

A fundamental requirement in arriving at methods of least waste is willingness to break with traditional methods. In this study by purely arbitrary decision the dishes were all washed after breakfast. The time of washing is not so important as the method. There is no good reason, aside from fastidiousness, why the rinsed, stacked luncheon and dinner dishes could not be left on the sink table until the washing period. If common-sense standards thus replaced the oven-hiding method, the travel line of 4 feet from sink to stove could be eliminated six times, with a saving of 24 feet of travel and 140 motions and 3 minutes, 22 seconds of time. This, in addition to the energy wasted in transporting the loaded pans,

TABLE 4

Average number of motions and time required for units of operations and for total job in washing a day's dishes for a family of four in accordance with present practice (I) and with synthesized practice (II), together with those required in accordance with recommended synthesis (II_b)

UNITS OF OPERATION	I PRESENT PRACTICE			II SYNTHESIZED PRACTICE			SAVING (+) OR LOSS (−) FROM SYNTHESIZED PRACTICE			II_b RECOMMENDED SYNTHESIS		
	Motions	Time		Motions	Time		Motions	Time		Motions	Time	
		min.	*sec.*		*min.*	*sec.*		*min.*	*sec.*		*min.*	*sec.*
1: Scraping, stacking and clearing to tea cart	396	9	21	396	9	21				396	9	21
2: Removing to sink and rinsing in stacks	67	1	08	67	1	08				67	1	08
II, 3: Rinsing, stacking and oven storage of lunch, and dinner dishes				140	3	22	−140	−3	22			
II_b, 3: Rinsing and stacking of lunch and dinner dishes, night storage of silver										32		43
I, 3: Handwashing in 3 periods	671	12	50									
II, 4: Handwashing in 1 period				492	11	22						
I, 3 − II, 4							+179	+1	28			
II_b, 4: Hand washing in 1 period without oven storage of lunch and dinner dishes										450	10	29
I, 4: Rinsing in teakettle water	96	2	30									
II, 5: Rinsing in teakettle water, air drying				77	1	46						
I, 4 − II, 5							+19		+44			
II_b, 5: Rinsing in hot tap water and drying and storage in drainer										63	1	17
I, 5: Towel-drying, grouping in tea cart	582	9	51				+582	+9	51			
I, 6: Storage by groups	142	2	28									
II, 6: Convenience storage				195	4	03						
I, 6 − II, 6							−53	−1	35			
Total for day	1954	38	08	1367	31	02	+587	+7	06	1008	22	58

should be a deciding factor for the intelligent worker. The 32 motions and 43 seconds recorded under "recommended synthesis" cover only the

preparation of the silver for over-night storage. The 450 motions and 10 minutes, 29 seconds in the last column represent the washing process minus the handling operations due to oven-stored luncheon and dinner dishes. The requirements for scald-rinsing are reduced to 63 motions and 1 minute, 17 seconds by assuming a supply of tap water at 160° or 180°F. as a substitute for rinsing in water heated in a teakettle.

As has been already suggested, air-drying effects a total saving of 582 motions and 9 minutes, 51 seconds in wiping operations, besides affording bacteriologically cleaner dishes. Further, as previously suggested, the final storage unit could be entirely eliminated for daily practice if the cleaned dishes were kept in the drainer until needed for another meal. It must be admitted that this would not be set up as desirable "standard practice" for best china, but it should be acceptable for common ware.

Assuming, then, that the operator is interested in reducing waste work and is intelligent enough to be able to change methods, the minimum requirements for dishwashing under the conditions here established could be given as 1,008 motions and 22 minutes, 58 seconds of time—a saving of 946 motions or 48 per cent of motions and 15 minutes, 10 seconds or 40 per cent of time over present practice.

ANALYSES III AND IV. DISHWASHING PERFORMED ONCE A DAY BY MACHINE

Continuing the analysis for conditions of least waste, a study was next undertaken of two popularly advertised domestic dishwashing machines, one a portable and the other a stationary type.

Analysis III was made with the Conover model C_6, a portable type, bucket filled and emptied. The Walker model D_6 (1919), used for Analysis IV, was a stationary type with permanent plumbing connections. The standard conditions set for the hand methods were used in these machine studies. Where variations were required, as in determining time limits for washing and rinsing operations and in general procedure, manufacturer's directions were followed.

Units of Operation with Portable Machines. The units of operation set up for investigation with the Conover machine were as follows:

Units 1 and 2. Accepted standard practice not repeated in this analysis.

Units III, 3. Rinsing stacked luncheon and dinner dishes and storing in machine for later one-period washing.

Unit III, 4. Washing dishes for three meals, according to manufacturer's directions with use of 6 quarts of water at 130° to 140°F., and 2 tablespoons of soap flakes per gallon of water, and washing operation continued for 10 minutes.

Unit III, 5. Rinsing in machine for 1 minute, with use of 6 quarts of boiling teakettle water, air-drying.

Unit III, 6. Unloading machine; convenience storage, using machine to replace tea cart.

Results of Analysis III. The six units submitted to analysis by this method showed a total requirement for the day of 1,164 motions and 26 minutes, 44 seconds. Although this represents a saving of 203 motions

TABLE 5

Average number of motions and time required for units of operation and for total job in washing a day's dishes for a family of four in one period by the use of a portable and a stationary machine

UNITS OF OPERATION	III CONOVER PORTABLE MODEL C_3			IV WALKER STATIONARY MODEL D_3		
	Motions	Time		Motions	Time	
		min.	*sec.*		*min.*	*sec.*
III, 3 and IV, 3: Rinsing and stacking, over-night storage of luncheon and dinner dishes in machine	150	3	26	135	2	23
III, 4 and IV, 4: Washing by machine in 1 period	173	4	32	161	4	15
III, 5: Rinsing by machine with teakettle water, air-drying	90	2	53			
IV, 5: Rinsing by machine with tap water, air-drying				61	1	45
III, 6: Moving and unloading machine, convenience storage in cupboard	288	5	24			
IV, 6: Unloading machine, convenience storage on shelves near sink				195	3	39
Total for machine operations	701	16	15	552	12	02
I, 1: Scraping, stacking, clearing to tea cart	396	9	21	396	9	21
I, 2: Removing to sink rinsing in stacks	67	1	08	67	1	08
Total for job	1164	26	44	1015	22	31

and 4 minutes, 18 seconds over the once-a-day hand dishwashing as set up under "synthesized practice" (II), it does not represent as great a saving in time and motions as is possible by the "recommended synthesis," (II_b) which would require 156 motions and 3 minutes, 46 seconds less than washing in the Conover machine. The figures for the units of operation with the Conover machine are shown in table 5.

As compared with synthesized practice (II), oven-storage was here eliminated, the machine itself serving as the storage place for dishes

awaiting washing, an obvious saving of the energy and time otherwise required for moving them. This energy-saving unfortunately was counterbalanced by the necessity of maintaining a stooping position in storing the dishes, piece by piece, in the fixed racks in the bottom of the machine,[2] by five liftings of the loaded top tray, and by four liftings of the bucket to fill and empty the machine. A fatigue study on these operations would be illuminating.

In the analysis of operations performed by this machine, as in those under synthesized practice (II), those concerned with unloading and final storage showed an increase over present practice (I) in both motions and time required, the figures being 288 motions and 4 minutes, 9 seconds with the machine and 142 motions and 2 minutes, 28 seconds with present practice. The method of leaving the dishes in the drainer until needed could not be applied in the machine as the latter served as storage unit for the soiled dishes. Substituting open shelves near the sink for a remote closed cupboard would serve to reduce both time and motions.

Units of Operation with Stationary Machine. The units of operation for the study with the Walker machine were as follows:

Units 1 and 2. Accepted standard practice not repeated in this analysis.

Unit IV, 3. Rinsing and stacking luncheon and dinner dishes, storing in machine for later one-period washing.

Unit IV, 4. Washing dishes for three meals, following manufacturer's instructions, with use of 2 tablespoons of water softener (instead of soap flakes), 6 quarts of tap water at 130° to 140°F., and the washing operation continued for 10 minutes.

Unit IV, 5. Rinsing in machine for 1 minute with use of 6 quarts of boiling teakettle water, air-drying.

Unit IV, 6. Unloading machine and convenience storage on open shelves to left of sink.

Results of Analysis IV. The six units investigated in this analysis showed a total requirement for the day of 1,015 motions and 22 minutes, 31 seconds, figures almost identical with those in the "recommended synthesis" (II_b) for dishwashing by hand once a day, which were 1,008 motions and 22 minutes, 58 seconds. The figures are given in table 5.

Although there is not a great difference in total motions and time required with these two machines, a metabolism or fatigue study would, no doubt, give a decided advantage to the stationary as compared with the bucket-filling, bucket-emptying type.

Efficiency of Machine Dishwashing. In setting up the conditions for these investigations, foodstuffs were included which afforded dishwashing

[2] The Conover model AA, which in 1929 replaced C_4, eliminates this disadvantage.

difficulties. For washing by hand, efficiency expressed in terms of clean dishes was by principle 100 per cent; that is, the dishes were washed until completely clean. With machines, on the other hand, efficiency, in terms of cleanliness, may be beyond the control of the worker.

The manufacturers of both machines recommended as standard practice for a family of four that the day's dishes be washed at a single period. In the case of both machines, and under the conditions set up for the present study, this practice resulted in overcrowding and reduced efficiency because not all dishes were subject to the direct action of the water. Increasing the 10 ninute washing period recommended by the manufacturers did not overcome the difficulty. Ten minutes was adequate if the water was unimpeded, otherwise the time of operation had no effect on efficiency.

TABLE 6

Average number of motions and time required to wash a day's dishes for a family of four according to five methods subjected to analysis

METHOD	MOTIONS	TIME	
		min.	*sec.*
I. Present practice: washing by hand 3 times a day	1954	28	8
II. Synthesized practice: washing by hand once a day	1367	31	2
II_b. Recommended synthesis: modification of II	1008	22	58
III. Washing by portable machine once a day	1164	26	44
IV. Washing by stationary machine once a day	1015	22	31

If 100 per cent efficiency is to be obtained with such dishwashing machines, either the standard of dining service for a family of four must be lowered or the operation must be performed more frequently than once a day or the machine must be built with a greater capacity.

Summary and Conclusions

The figures for motions and time required in washing dishes according to the methods analyzed in this study are summarized in table 6.

The contrasts between present practice (I) as here set up for analysis and the synthesized practices (II and II_b) possible for the same job with the same equipment, indicate the value of applying the analytical method to household jobs. Although it is possible, provided one is willing to accept the short-cut methods described, to arrive at a lower total requirement for both motions and time by hand methods than by machine methods, it must be granted that a comparison based wholly on

motions and time required does not give a complete answer to the problem involved. If one cannot tolerate the sight of stacked dishes waiting to be washed or of washed dishes waiting to be used, or has not enough dishes to take advantage of the synthesized practice, then in comparison with present practice a dishwashing machine is a saver of time and labor. For a complete answer to the problem, measurements of fatigue and of psychological reactions to the job are needed. Lacking these, the individual consumer must decide on the relative desirability of subjecting her hands to "hot soapy water" three times a day, once a day, or not at all, and consider the price she is willing to pay for her choice.

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BOOKS AND PERIODICALS

NEW BOOKS

Trends and Needs in Home Management. An Analytical Study of Home Management in Higher Institutions in Order to Ascertain Trends and to Formulate Policies. Teachers College, Columbia University, Contributions to Education, No. 365. By HELEN ELIZABETH JUDY. New York: Bureau of Publications, Teachers College, Columbia University, 1929, pp. 128, $1.50

Is the "changing American home" affecting the aims and objectives of home management as it is taught in college today? This study proves that such is the case. The material is based on sixty-eight replies to a questionnaire which was sent to one hundred institutions of higher learning and the judgment of a jury of ten outstanding home economists.

The instructors who filled out the questionnaire had had adequate training and experience in teaching home management so that the findings can be accepted as giving a true picture of the trends and needs of home management as they now appear to qualified witnesses.

Among the outstanding findings may be cited the following: The time allotted to home management courses of study is on the increase. The aims in home management teaching which deal with performance of tasks, the development of skill, the dissemination of detailed information in regard to household tasks are generally declining in importance. The aims which stress interrelationship of functions, economy in the use of time, energy and money, development of judgment, efficient consumption, consideration of family and community relationships, the use of leisure, are considered most desirable. The use of the home management house is greatly increasing in favor as a method of teaching, though at present the lecture method still predominates. The textbooks used in home management courses deal chiefly with the economic and industrial side of the home. Home management problems must be solved by the close cooperation of the home and all institutions that affect it.

Any instructor who is developing new courses of study should find it helpful to go over the questionnaire lists on the content of courses and the aims and objectives of home management work. Ample proof is given that home management is gaining a more important place in the curriculum and that home management courses during the next few years will be revised considerably. The next step, as Miss Judy indicates, should be surveys that would include the homemaker's point of view and give information about institutions that affect home life.

The chapter on "Formulation of Policies" leaves one wishing for a more comprehensive interpretation. Regardless of this one weak spot, home economics workers will be grateful for this contribution by Miss Judy. She has given us a much needed stepping stone.—MARY ROKAHR, *Home Management Specialist, United States Department of Agriculture, Washington, D. C.*

Rickets Including Osteomalacia and Tetany. By ALFRED F. HESS. Philadelphia: Lea and Febiger, 1929, pp. 485, $5.50 net

This monograph provides a thorough and critical discussion of a condition which has been the subject of a vast amount of productive work in the last twelve years. Equally well equipped as a clinician and as a laboratory man, the author, who is clinical professor of pediatrics, University and Bellevue Hospital Medical College, New York City, has chosen to organize his subject matter from the point of view of the clinician—etiology, pathogenesis, metabolism, pathology, symptomatology, radiographic signs, diagnosis, prognosis, treatment. This is fortunate because, while providing ample opportunity for the discussion of recent advances which have been so notable in etiology and treatment, it brings to the attention in just proportion the large gaps which still exist, especially in our knowledge of the pathogenesis of the condition. Chapters on history and geographic distribution, on experimental rickets, on late rickets, osteomalacia, and infantile tetany, illustrations small in number but well chosen, and an excellent bibliography arranged by chapters at the end of the book, complete a well-rounded volume.—ALICE F. BLOOD, *Simmons College, Boston, Massachusetts*.

Costume Throughout the Ages. By MARY EVANS. Philadelphia: J. B. Lippincott Company, 1930, pp. 358, $3.50

A valuable compendium of information, the first part of which outlines the historical development of costume in the ancient world, France, England, and the American colonies; while the second describes folk costumes still surviving in Europe, northern Africa, Asia, and the American continent. There are over two hundred illustrations, those for the earlier periods drawn mainly from museum materials, including portraits and genre pictures; and those for present-day costumes taken many of them from photographs of the originals in actual use. The references at the end of each chapter and the eleven-page bibliography add to the general value of the book, while topics for class discussion and suggestions to teachers increase its usefulness for high schools and colleges.

Art in Industry. By CHARLES R. RICHARDS. New edition. New York: The Macmillan Company, 1929, pp. 499, $2.50

This new edition of the report of an important survey of industrial art differs from the original 1922 edition by the inclusion of fifty or more carefully chosen and beautifully reproduced illustrations of modern design in textiles, furniture, lighting fixtures, silverware, table china, and other fields of applied art. The survey, which was conducted under the auspices of the National Society for Vocational Education and the Department of Education of the State of New York, is still the only one available for its field. Practically all of the trade studies included, deal with goods of interest to home economics. Home economists will further find the book a valuable source of information on schools of applied art here and in Europe, and on agencies to promote such art in the United States, to say nothing of their interest in some of the special articles, such as the one on "The Relation of Beauty to Fashion" by Frank Alvah Parsons. The cost of producing the present edition is obviously many times its selling-price, but the General Education Board is sponsoring it because of its value as a stimulus to the production and appreciation of good design.

Buying an Honest House. By MILTON TUCKER. Boston: Little, Brown, and Company, 1930, pp. 151, $2.00

A man of long architectural and building experiences here puts down with clearness, brevity, and a minimum of technicalities the principal things which indicate good and bad construction in houses already built, beginning with the foundations and continuing through framework, inside and outside finish, roof, masonry, and equipment for heating, water, gas, and electricity, and not forgetting the garage. The reproductions from photographs and the amusing thumb-nail sketches drive home the main points of the text. The book is a welcome, up-to-date addition to the scanty supply of information on such subjects available to the ordinary householder.

Us Diabetics and Our Doctors. By DON H. DUFFIE. South Lancaster, Massachusetts: The Author, 1929, pp. 120, $1.50

A sensible, practical, simply written, well-illustrated handbook, especially helpful to diabetic patients of moderate means or living away from large markets.

Public Health Aspects of Dental Decay in Children. By RAYMOND FRANZEN. No. III of the School Health Research Monographs. New York: American. Child Health Association, 1930, pp. 121, paper binding, $1.00; cloth binding, $1.25

The mouth records of 7,500 children in fifth and sixth grades and several thousand younger children are here analyzed, primarily as a contribution toward the establishment of means of determining the efficacy of school health programs. Incidentally, much useful information is given on oral hygiene; continuity of decay, and the effect of defects in enamel and of fillings on decay; occurrence of stain, tartar, and gingivitis; and methods of control.

The Baby's First Two Years. By RICHARD M. SMITH. New and revised edition. Boston: Houghton Mifflin Company, 1930, pp. 159, $1.75

A successful handbook by a well-known Boston pediatrician, first published in 1915 and now considerably revised to bring it into line with advancing medical knowledge. The rules for the care and feeding of infants, the suggestions to mothers, and the recipes and charts which it gives, are presented simply, clearly, and directly to make them practical and easy of reference.

On Being a Father. By K. M. and E. M. WALKER. New York: W. W. Norton & Company, Inc., 1929, pp. 192, $2.00

The things that the inexperienced father often wishes he knew but can't always find out about, as to the responsibilities which the advent of a baby brings to him, are here presented by a doctor and his wife with knowledge, common sense, and much humor. Though written from the standpoint of the well-to-do Englishman, much of the book is equally applicable to other walks of life. Included is a 14-year-old's delicious disquisition on "How Parents and Children Can Improve Themselves."

Incompatibility in Marriage. By FELIX ADLER. New York: D. Appleton and Company, 1930, pp. 105, $1.50

A collection of wise essays by the well-known leader of the New York Society for Ethical Culture, including not only the one from which the book takes its name but six others on ethical aspects of the relations between the sexes and between the older and younger generations, and of our attitude toward conventional morality and toward the dead.

Salvaging Old Age. By LILLIEN J. MARTIN and CLARE DE GRUCHY. New York: The Macmillan Company, 1930, pp. 173, $2.00

Two social workers with unusual experience in dealing with the aged (one of them herself an active woman of seventy-eight) here make a welcome contribution to a much-neglected subject. They believe that the prevalent unhappiness of elderly persons is due quite as much to mental attitude as to physical handicaps and believe that it can be prevented by developing a general appreciation of the capacity of older persons to perform useful service, and by combating the usual assumption that old age is necessarily a period of dependent uselessness.

A History of Women's Education in the United States. By THOMAS WOODY. Volumes I and II. Lancaster, Pa.: The Science Press, 1929, pp. 608, 646, $10.00 per set

A contribution to the series of "Studies in the History of Education" of which the present author is editor. The first volume deals mainly with general conceptions of women's education and the development of educational institutions for women in the United States. The second considers the changing economic status of women and the more recent developments in education to meet their changing needs. A chapter on vocational education devotes 13 pages to "domestic economy," quoting largely from several of the earlier writers on the subject, but including no reference to the Lake Placid Conference or the movement instigated by it, and indicating little or nothing of the changes which have taken place in the home economics programs of the public schools in the last two decades.

Which College? By RITA S. HALLE. Revised edition. New York: The Macmillan Company, 1930, pp. 305, $2.50

The revision of a handbook of information regarding the colleges of the United States, first issued in 1928; well organized for ready reference.

Survey of College Entrance Credits and College Courses in Music. By RESEARCH COUNCIL OF THE MUSIC SUPERVISORS NATIONAL CONFERENCE in cooperation with the NATIONAL BUREAU FOR THE ADVANCEMENT OF MUSIC. New York: National Bureau for the Advancement of Music, 1930, pp. 209, $2.00

A careful and valuable study of special significance in connection with the increasing public interest in music and its systematic utilization for various purposes, cultural and otherwise.

The Business Biography of John Wanamaker. By JOSEPH H. APPEL. New York: The Macmillan Company, 1930, pp 471, $5.00

ABSTRACTS FROM PERIODICALS

CHILD DEVELOPMENT AND PARENTAL EDUCATION

EDUCATIONAL METHODS

Further studies of children's interest in collecting, P. A. WITTY and H. C. LEHMAN. *J. Educ. Psychol.* **21,** 112–127 (1930)

A review of the divergencies in results previously reported by these authors from those of Burk and of Whitley, indicates that they are due to differences in definitions of terms and technics. Data from additional studies are presented which show that 1,676 children were engaged in making more than 12,000 collections, that ten is the chronological age at which the maximum number (11 for girls and 10 for boys) is made; that girls report more collections than boys at every age level, and that the use of a check list for reporting collections increases the number reported. Other variables are sex, locality, season, and definition of the term "collection." The pedagogical use of the wide interest in collecting is discussed.

Applying nursery school methods of child training in the home, HELEN W. FORD. *Kansas State Agr. Bull.* **13,** No. 8, pp. 40 (1929)

Modern methods with regard to children's occupations, punishments, discipline, consideration of others, property rights, bad habits, how to develop self-reliance and perseverance and to acquire good food habits are listed and discussed briefly. The outline form employed makes it valuable as a quick reference, and the charming illustrations emphasize the principles laid down.

A scale for measuring developmental age, P. H. FURFEY. *Mental Hyg.* **14,** 129–136 (1930)

The method of setting up this scale and its correlation with others are discussed. The author feels that "the concept of developmental age introduces quantitative methods into a field in which hitherto research has been on a purely descriptive level. Since developmental age is connected with the growth of the whole personality rather than with a single aspect of it as in the case of mental age, educational age, or physiological age, this new concept ought perhaps to be useful both to the clinician in his study of particular children and to the research psychologist in his investigation of childhood in general."

The suggestibility of children, ELIZABETH B. HURLOCK. *Ped. Sem. & J. Genetic Psychol.* **37,** 59–73 (1930)

In an experiment to determine the extent of suggestibility in children and its relation to age, sex, race, and general intelligence, 194 white and 210 comparable colored children, approximately 13 years of age, of average intelligence, from a New York public school were given certain tests from the total results of which it is shown that the children, without reference to age, sex, race, or intelligence, successfully resisted approximately two-thirds of the suggestions given; that white children were but slightly better able to resist suggestion than colored; that both white and colored boys were slightly superior to the girls of their racial groups in resisting suggestion; and that some relationship exists between mental ability, as indicated by mental age, and ability to resist suggestion. These results are contrary to common beliefs about the suggestibility of children and racial differences. Greater individual differences between children within the groups were shown than between the groups.

The effect of nursery-school training upon the mental-test performance of a group of orphanage children, HELEN E. BARRETT and HELEN L. KOCH. *Ped. Sem. & J. Genetic Psychol.* **37,** 102–121 (1930)

A study of a group of orphanage children placed for from six to nine months under a nursery-school régime, and a comparable control group of orphans without that experience, shows a consistently greater gain in mental-test performance in favor of the former. The nursery-school children had an average IQ of 91.71 by test before training and 112.57, by retest after training; while the control group averaged 92.59 and 97.71, respectively. The initial test corroborated the findings of many other studies, to the effect that dependent children rate lower in test performance than children in the general population. But the results of the retest of these children showed them to be further above the normal after training than they were below on the first test. That this was not the result of their experience with the test is proved by the fact that the control group showed no comparable gain. While the methods used are too crude to give conclusive results, it would appear that "the nursery-school training has functioned to produce the consistent and striking superiority of the experimental over the control group."

The daily programs of thirty gifted children, GENEVIEVE L. COY. *Ped. Sem. & J. Genetic Psychol.* **37,** 123–137 (1930)

By means of records kept by the children themselves over periods of from 3 to 15 days, the ways in which 30 children, whose IQ's ranged from 133 to 190, spent their time is studied in an attempt to discover their interests and ways of raising the level of their leisure activities. Data covering 22 different activities are tabulated, from which the average percentage of the 24 hours spent in each occupation appears to be as follows: sleep, 43.5; school, 14.75; play, 11.25; meals, 8.6; transportation, 4.6; reading, 3.2; home study, 3; music study, 3; dressing, 3; moving pictures, 0.7; visiting, 0.6; shopping, 0.5. Wide individual differences appear in the time spent in certain activities, as in play, reading, and home study; but no significant differences are found between the children with high and lower IQ's. Boys are found to play on the average of almost an hour more per day than girls; girls read more than boys; but boys study at home more than do girls.

Triplets, ANNA L. BUTTS. *Psychol. Clinic* **18,** 266–273 (1930)

An interesting case study of triplets, with a comparative analysis of the results of their mental examinations and a personality study. Both of these revealed marked individual differences in physical, mental, and personality endowment, which led to the separation of the children and the school placement of each in the ability group suited to his satisfactory progress.

MENTAL HYGIENE AND BEHAVIOR PROBLEMS

Child Study **7,** No. 5 (1930)

Concerning rewards and punishments, D. A. THOM, 131–133

The "catch" in praise, JESSIE TAFT, 133–135, 150

Why praise parents? GLADYS H. GROVES, 136–137

Toward a wiser use of rewards, DORIS SCHUMAKER, 138–139

Rewards as disciplinary devices are critically analysed and evaluated by these recognized authorities who show that the good results which follow immediately upon even subtly disguised rewards, represent only a temporary ad-

vantage and fail to contribute to the development of the total personality.

Family attitudes affecting school behavior, MARION MCBEE. *Family* **11,** 13–16 (1930)

Eight illustrative case studies are given, first, of helpful family attitudes and, second, of aggravating attitudes as they have affected children's school behavior and of the adjustments made possible through the mental hygiene clinic.

Emotional needs of the child from birth to three years, W. A. POTTS. *Maternity Child Welfare* **14,** 31–32 (1930)

Satisfactory emotional adjustment of the young child is shown to be of as great importance as his intellectual and physical development. It entails a sense of security, based on the parents' love; an attitude of respect for the child's individuality without domination by the parents or their use of him as an outlet for their own emotions; a gradually increased freedom; an exposure to emotional disturbances and disappointments as they normally occur; and an opportunity for spiritual growth.

What the adolescent girl needs in her home, G. H. J. PEARSON. *Mental Hyg.* **14,** 40–53 (1930)

The stress observed in adolescent girls is usually attributed to physiological causes, but the fact that among primitive races there is an easy transition from childhood to adulthood suggests that the emotional instability characteristic of adolescence among civilized people may be due to prolonging the girl's dependence far beyond the time of physical maturity and depriving her of adult freedom and its attendant responsibilities, while demanding control of fundamental urges to an extent found impossible by some mature adults. The feelings of inferiority and inadequacy in the adolescent which result from our social organization express themselves in the desire for attention, clothes, money, success, and group approval. When the home situation does not prepare the girl to face the difficult adjustments demanded of her, her behavior becomes unacceptable to varying decrees. A number of case studies illustrative of the results of bad home situations are discussed, which show that where parents succeed in making the child feel loved and wanted and that her efforts at independence are acceptable, she is free to develop self-confidence and to meet difficult situations; but where one or both parents use the child to satisfy their own emotional needs, her personality cannot become integrated, and adolescence is difficult. Such parents cannot themselves help their children, since their own attitudes have produced the problem. Nor should a superficial change be attempted in the child's behavior without removal of the cause. Treatment lies in an attempt to understand the child and to supply the emotional needs revealed.

The incidence of first-born among problem children, CURT ROSENOW. *Ped. Sem. & J. Genetic Psychol.* **37,** 145–151 (1930)

From a study of the complete case records of two child guidance demonstration clinics, it is shown that first-born children from small families present problems to the clinics more frequently than do other children from such families.

Neurosis: a group of symptoms associated with maladjustment, ALICE M. HUTCHISON. *Rev. intern. Enfant* **8,** 785–794 (1929)

Symptoms of neurosis in children usually appear before the age of four and their early detection and treatment is of

great importance. Neurotic children have a sense of dissatisfaction with life and a characteristic lack of courage, due somewhat to hereditary instability and to their sense of insecurity within the family group. Overdependence upon parents and the use of fear as an incentive to good behavior are factors which prevent the development of courage. Early neurotic symptoms are disturbances of sleep, loss of appetite and digestive upsets, constipation, asthma, bed-wetting, stammering, withdrawal, anxiety and fear states, inability to make decisions, and restlessness. Certain of these are discussed in detail.

The practical value of mental hygiene to the welfare of the child, D. A. THOM. *Rev. intern. Enfant* **9,** 10–25 (1930)

The importance of the first five years of life is stressed, since then physical and mental defects can be recognized, understood, and treated and the danger of carrying personality handicaps over into adult life avoided. The responsibility for the early recognition of such problems and for providing suitable training must be assumed by parents, teachers, nurses, and family physicians rather than by specialists. The latter should make available the knowledge regarding mental hygiene in order that undesirable environmental factors, as well as physical defects, may be recognized and corrected. Many pertinent case histories are cited to illustrate the problems met.

PHYSICAL DEVELOPMENT

The age, sex, and seasonal incidence of certain diseases in children, F. F. TISDALL, ALAN BROWN, and A. D. KELLY. *Am. J. Diseases Children* **39,** 163–173 (1930)

The records of about 7,500 patients examined with regard to the 25 diseases considered, showed a pronounced age incidence with regard to 8; that 60 per cent of all patients were males; that pyloric stenosis and tetany occurred chiefly in males, and pyelitis and primary peritonitis in females; and that only in tetany and anterior poliomyelitis was there a marked seasonal incidence. Certain other diseases showed suggestive seasonal predominance.

Growth changes in physical correlation —height, weight, and chest circumference—males, JOSEPH BERKSON. *Human Biology* **1,** 462–502 (1929)

Samples taken from six group studies of large numbers of individuals of all ages were investigated by the biometric method to determine the intercorrelations between the three morphologic variables, height, weight, and chest circumference, in males. The correlations between weight and chest circumference, height and chest circumference, and between height and weight all show a maximum point at about 14 years. The correlations between height and weight show a trend toward alternate maximum and minimum points at approximately 1.5 years, 3 years, 6 years, 11 years, 14 years, and 21 years of age.

The problem of chronic anorexia in childhood, FREDERIC W. SCHULTZ. *J. Am. Med. Assoc'n* **94,** 73–77 (1930)

Chronic anorexia is usually found in the asthenic child of the type resulting either from constitutional disposition or from the prolonged action of some disease process, obscure or manifest. Asthenic children of the first type show hyperactivity, instability of temperament, behavior problems; those of the second are quiet, resigned, obedient. Cases of chronic primary anorexia show delayed emptying time of the stomach, greatly diminished hydrochloric acid, decrease in the "hunger period" and

"hunger contractions." Treatment of organic anorexia is comparatively simple: removal of foci of infection, good food, rest, radiant energy. In functional cases, environment and food habits are the contributing factors. Complete change of environment, starvation, re-education are indicated. Food should be of high concentration; small volume; high mineral, vitamin, and carbohydrate content, with cod-liver oil. Milk consumption should be greatly diminished.

Children's dentistry, CLIFFORD SWEET, R. G. WATSON, and H. E. STAFFORD. *J. Am. Med. Assoc'n* **94,** 544–545 (1930)

The importance of effective preventive dentistry for children, its cost, and the physician's responsibility with regard to this service, are effectively shown.

The preschool child as a health problem, R. A. BOLT. *J. Health & Physical Educ.* **1,** 12–13, 56 (1930)

A large number of the physical and mental defects of children are shown to develop between 2 and 6 years of age. While this is primarily a parental and community problem, the school is vitally concerned and should assist in correlating the educational work of all social and community agencies in an attempt to prevent and correct maladjustments in preschool children and thus lessen the adjustments required after school entrance.

What a two-and-a-half-year-old child said in one day, LAURA C. G. HAGGERTY. *Ped. Sem. & J. Genetic Psychol.* **37,** 75–100 (1930)

A verbatim report of the entire linguistic expressions of a child during the nine and a half hours of a representative day.

Genetic studies of emotions, H. E. JONES and M. C. JONES. *Psychol. Bull.* **27,** 40–64 (1930)

An exhaustive review of the literature under the headings: methods, "primary emotional patterns," modification of the emotions, periodicity in the development of emotions, emotional "types," related variables in emotional development, and the functional significance of the emotions. The bibliography contains 142 titles.

H. R. H.

FOOD AND NUTRITION

Contributed by the staff of the Food and Nutrition Division, Bureau of Home Economics, United States Department of Agriculture

The comparative value of irradiated ergosterol and cod-liver oil as a prophylactic antirachitic agent when given in equivalent dosage according to rat units of vitamin D, D. J. BARNES, M. J. BRADY, and E. M. JAMES. *Am. J. Diseases Children* **39,** 45–58 (1930)

A comparison is reported of the antirachitic value of cod-liver oil and irradiated ergosterol which were assayed biologically and given to infants in like doses based on the number of rat units of vitamin D. The infants were separated into four groups as they came into the clinic; 57 received irradiated ergosterol; 64 were given cod-liver oil; 49 were fed a mixture of cod-liver oil and irradiated ergosterol; and 49 made up the control group. As judged by determinations of the blood calcium and phosphorus and checked by roentgen examinations, the cod-liver oil proved a much more satisfactory antirachitic agent than the irradiated ergosterol. The study showed no definite evidence of a greater incidence of rickets among formula-fed than among breast-fed infants.—H. B. K.

Is irradiated farina as bought in the market enriched with vitamin D? F. W. SCHLUTZ and M. R. ZIEGLER. *J. Am. Med. Assoc'n* **93,** 1466–1467 (1929)

Rats from stock reared and fed on Bills' modification of Steenbock's ration (*J. Biol. Chem.* **76,** 251, 1929) were given Steenbock's diet 2966 (*J. Biol. Chem.* **64,** 274, 1925) for 21 to 28 days or until they became definitely rachitic, then farina was incorporated as 10 per cent of the diet. After rats had been fed for 10 or 15 days on this test diet, roentgenograms were taken and blood and bone analyses made. The authors concluded that no healing of the rickets could be detected in rachitic rats when farina irradiated under the Steenbock (Wisconsin Alumni Research Foundation) process, was fed at the level indicated.—C. H. M.

Relation of American dietary to degenerative disease, L. LANGSTROTH. *J. Am. Med. Assoc'n.* **93,** 1607–1612 (1929)

On compiling the dietary records of over 500 cases of hypertension, myocardial degeneration, arteriosclerosis, arthritis, chronic gastro-intestinal disease, diabetes, and headache, which are diseases of the chronic degenerative type, the author found that diets were low in vitamin and residue and high in calories, carbohydrates, and the relation of acid to alkaline ash-forming foods. Bread, meat, potato, all forms of sweet dessert, and the accessory foods—butter, cream, sugar, and mayonnaise—formed 79 per cent of the average diet; bread and butter were the largest single items, 16 per cent and 17 per cent respectively. The protective foods, milk, eggs, fruit, vegetables, and lettuce formed only 12 per cent of the average diet. By feeding a diet containing a high percentage (70 per cent) of protective foods, he found that degenerative disease could be modified, usually in the mitigation of distressing symptoms, often in the actual restoration of the integrity of injured structure. A table of average protective or non-protective values of commonly used foods is given, with a recommended diet.—C. H. M.

Basic (vitamin) feeding in tuberculosis, E. MAYER and I. KUGELMASS. *J. Am. Med. Assoc'n* **93,** 1856–1862 (1929)

The authors applied the dietary meth-

ods of Sauerbach and Gerson (*Munch. med. Wochschr.* **73,** 47, 1926; **75,** 35, 1928; **76,** 21 and 68, 1929) to a group of 20 patients at Saranac Lake, New York, who were in the advanced stages of pulmonary tuberculosis and who had not responded to two or three years of routine treatment. The diet used supplied approximately 3,500 calories and was basic, low in sodium chloride, animal protein, and carbohydrate, rich in fat and vitamins, and supplemented by an alkaline salt mixture. Cream, butter, cheese, egg yolk, nuts, lemon juice, cod-liver oil, tomato, lettuce, and vegetables formed the greater portion of the diet. Eight of the patients gained weight and most of them showed definite improvement in general condition. The authors concluded "that the inorganic constituents, whether acid-forming or base-forming, are not as important as the vitamin content of the dietary. Both inorganic constituents and vitamins regulate cellular metabolism, and the absorption and utilization of minerals depend on the simultaneous presence of vitamins in the alimentary tract."—C. H. M.

Viosterol (irradiated ergosterol) in the treatment of parathyroid tetany, J. C. BROUGHER. J. *Am. Med. Assoc'n* **94,** 471–473 (1930)

Since experiments on parathyroidectomized dogs have shown that the tetany may be relieved by cod-liver oil or Viosterol, the author has applied these results clinically. Three patients have shown improvement when cod-liver oil was administered together with yeast. Owing to the fact that Viosterol is more potent in vitamin D than cod-liver oil, it has since been substituted for the latter in the clinical treatment of two other patients. All of the patients have shown marked improvement, four cases, being totally relieved of tetany which developed after bilateral subtotal lobectomy and one case of tetany due to a long illness and gastro-intestinal upset being benefited.—C. H. M.

The effect of the curing process upon the vitamin A and D content of alfalfa, W. C. RUSSELL. *J. Biol. Chem.* **85,** 289–297 (1929)

Because of the extensive use of alfalfa hay for domestic animals, it was considered desirable to determine whether curing processes affected the vitamin A and D content. Samples of the hay were dried on the ground as in the usual curing process and by a mechanical drying process. Only the leaves of the cured product were tested for vitamin content. Results showed that the artificially cured leaves which retained the greater part of their green color contained seven times as much vitamin A as the field-cured ones, and only a small amount of vitamin D. The alfalfa dried in the sun, without exposure to dew or rain, showed an increase in antirachitic potency with a decrease in vitamin A content.—E. P. D.

Inorganic elements of spinach in the treatment of nutritional anemia, H. S. MITCHELL and LILA MILLER. *J. Biol. Chem.* **85,** 355–363 (1929)

In an attempt to determine whether elements other than iron and copper influence hematopoietic function, a concentrated extract of dried spinach was selected for study. This material furnishes a natural source of hemoglobin-regenerating substances and consequently might offer some clue to the proper balance of inorganic constituents necessary for good blood building. Results of feeding anemic rats with the spinach extract, as a supplement to a milk diet, showed that either a quantity supplying 0.5 mg. iron, 0.014 mg. of copper, and 0.012 mg. of manganese or one supplying half of

this amount was more effective than a corresponding iron-copper or iron-copper-manganese complex of pure salts. The spinach ash administered in solid form did not give as good results as in solution. An analysis of the extract showed copper, antimony, tin, iron, aluminium, zinc, manganese, strontium, calcium, magnesium, sodium, potassium, and phosphorus to be present which indicates that a group of elements rather than copper alone is active in supplementing iron in hemoglobin formation.—E. P. D.

The nutritive value of cereal breakfast foods, I, II, and III. *J. Nutrition* **2,** 83–110 (1929), 217–224 (1930)

I. Composition and heat value, J. R. MURLIN, W. R. LINE, et al., 83–90. This study reports the analysis of six different cereal breakfast foods, three from wheat, two from oats, and one from corn, including three pre-cooked and three uncooked, and all widely used in the United States. All of the foods except one were burned in the bomb calorimeter, and their physiological heat values compared with the combustion values in four, as a preliminary to a more detailed comparative study of nutritive values.

II. Digestibility in vitro, with a study of methods, J. S. CARMAN, H. G. SMITH, G. C. HAVENS, and J. R. MURLIN, 91–110. A comparison is given of the six cereal breakfast foods as to their digestibility by salivary amylase, pepsin-hydrochloric acid, trypsin, and malt diastase, together with a description of the three different methods used. The effects of different cooking periods were also studied. It was found that precooking affected favorably the digestion of starch and that boiling improved the digestibility of the protein more than that of the starch.

III. The rate of digestion and absorption as determined by experiments on rats, H. A. MATTILL and H. G. SMITH, 217–224. A method is described whereby the rate of passage of cereals from the stomach and the speed of absorption from the intestinal tract of rats were studied. It was found that the finely ground cereal left the stomach more rapidly than the granular cereals. Physical consistency of the cereals seemed to determine the time of sojourn in the rat's stomach.—H. B. K.

Vitamin studies. XVII. Ossifying potency of raw and evaporated milks, H. E. HONEYWELL, R. A. DUTCHER, and C. D. DAHLE. *J. Nutrition* **2,** 251–256 (1930)

In prophylactic experiments with rats in which milk was added to a rachitic diet, evaporated milks prepared by vacuum and aëration methods were fed at different levels in direct comparison with the raw milk from which they were made. It was found that the ossifying potency of the treated milks is less than that of the raw.—H. B. K.

The vitamin A content of yellow and white-capped yellow dent corn, W. C. RUSSELL. *J. Nutrition* **2,** 265–269 (1930)

The yellow dent corn examined in this investigation was found to be about 50 per cent richer in vitamin A than a white-capped yellow dent variety.—H. B. K.

Ueber Reformen der Schwangershaftsdiät mit Rücksicht auf das Vitaminbedürfnis der Fetus [Reforms in the diet for pregnancy with regard to the vitamin requirements of the fetus], E. VOGT. *Münch. med. Wochschr.* **76,** 1959–1961 (1929)

In discussing the vitamin requirements of the growing fetus, the author expresses the belief that the prevalence of prema-

ture birth, stillbirth, and eclampsia indicates the necessity of initiating vitamin treatment as early as possible in pregnancy. He recommends the enrichment of the diet by green vegetables, eggs, milk, and dairy products, together with, in some cases, the administration of dried yeast and a commercial product known as vigantol.—H. B. K.

Vitamin D in tuberculosis, B. KRAMER, H. G. GRAYZEL, and M. J. SHEAR. *Proc. Soc. Expt'l. Biol. Med.* **27**, 144–146 (1929)

The frequent question of the relation of the vitamins to tuberculosis has given rise to specific inquiry into a possible linkage between tuberculosis and vitamin D. A report of a large number of cases at the New York State Hospital at Bay Brook and at the Neponsit Beach Hospital indicates that the daily addition of a large amount of vitamin D furnished by irradiated cholesterol, cod-liver oil concentrate, irradiated yeast, and irradiated ergosterol, did not produce any detectable acceleration of the healing process. This large amount of vitamin D, however, did not produce any toxic effects as has been reported by some investigators nor did it produce an increase in serum calcium or phosphorus. It was noted that the addition of orange or tomato juice to the diet aided in the retention of the cod-liver oil.—A. M. P.

Amount of ultra-violet radiation necessary to cure rickets, G. H. MAUGHAN and J. A. DYE. *Proc. Soc. Expt'l. Biol. Med.* **27**, 158–159 (1929)

In the light of present knowledge of the curative and protective properties of ultra-violet radiations, it is claimed by the authors that, with uniform radiations from a source of known strength, response to treatment can be predicted with almost the exactness of a chemical reaction. They believe that in experimental and clinical work it has been the practice to give much longer irradiations than are necessary. In their work with the irradiation of chickens they demonstrated the applicability of the law which states that intensity is inversely proportional to the square of the distance, and also that the benefit from irradiation is proportional to the area exposed.—A. M. P.

A study of the blacktongue-preventing value of leached commercial casein, together with a test of the blacktongue preventive action of a high protein diet, J. GOLDBERGER, G. A. WHEELER, et al. *U. S. Pub. Health Rep'ts* **45**, 273–282 (1930)

Proceeding on the hypothesis that blacktongue of dogs is the analogue of pellagra in man, a series of experiments was carried out to determine whether or not leached commercial casein carried the P-P factor with it and, at the same time, whether a high protein diet would have any effect on the production of experimental blacktongue of dogs.

The leached casein appeared to possess a small amount of the P-P factor, but a high protein diet had no appreciable effect on delaying the onset of blacktongue. This was taken to indicate that a high protein diet, when lacking in the P-P factor, is of little or no value in the prevention and treatment of pellagra.—A. M. P.

INSTITUTION ECONOMICS

Hitch-hikers' progress, W. R. REDDEN. *Cleanliness J.* **3**, No. 2, 7–8 (1930)

Several epidemics of disease are discussed which were traced to unclean methods of handling food, and the opinion is expressed that simple cleanliness will prevent much infection. The liberal use of soap, running hot water, finger-nail cleaners, scrubbing brush, and individual towels should be insisted upon wherever food is handled.

Rates, raises, and promotions, R. G. BLANC. *Factory & Ind. Management* **79**, 55 (1930)

Factors listed by the author as to be considered in connection with rates and raises in pay, and promotions are quantity of output, losses from spoiled work and accidents, absences and the causes thereof, degree of skill required, initiative, dependability, suggestions tending to improve the product or reduce costs, and, in addition, length of service.

Do men want responsibility? RALPH W. HAMMIL and AGNES A. SHARPE. *Factory & Ind. Management* **79**, 304–306 (1930)

Since a man desires responsibility according to his personal capacity, provision for this should be secured by the adoption of a scientifically planned procedure of promotion. This will prove less costly and less time-consuming than the trial and error method, and will promote the efficiency and progressive development of workers.

Hiring and firing—shall the calendar measure length of service? LILLIAN GILBRETH. *Factory & Ind. Management* **79**, 310–311 (1930)

It is hoped that accurate figures regarding the ages of hiring and firing will be collected by industry and business as knowledge is needed of the relation of efficiency to calendar age. The industrial engineer feels that the permanent solution will come only through job analysis. A well-developed technic in personality analysis would also help, it being found that some persons succeed because of their age and some in spite of it.

The dismissal wage. *Factory & Ind. Management* **79**, 536–537 (1930)

Responsible organizations no longer dismiss employees without payment of some dismissal wage. For example, the Columbia Conserve Company pays two weeks salary; the Consolidated Gas, Electric Light and Power Company of New York gives to all but hourly employees one week's pay for service of from six to nine months, two weeks for service up to five years, and one month for all longer service periods; the Delaware and Hudson Railroad pays a wage to any employee who has subscribed to two types of insurance available to him—health, accident, death, and dismemberment and old age; Firestone Tire and Rubber Company allows one month's pay for employees with five to ten years' service, two months for longer periods.

Henry Ford's lunch box, BERTHA STREETER. *Forecast* **39**, 443–444 (1930)

Concessonaires in Ford plants are described as serving box lunches containing three sandwiches, cake, and fruit, together with coffee, chocolate milk, or milk. These are delivered between the fourth and fifth working periods of the eight-hour day and are distributed directly from camions.

Many factors enter into successful operation of diet therapy, HELEN E. GILSON. *Hospital Management* **29,** 31–32 (1930)

In filling a doctor's prescription, the dietition must consider the wishes of the physician, and such factors in the condition of the patient as temperature, surgical complications, whether his case is a bed or an ambulatory one, condition of teeth, age, nationality, personal likes and dislikes, idiosyncrasies, and economic status.

Metabolic diets are expensive from the standpoint of food, preparation, and labor; centralization of this service with certain separate wards, kitchens, laboratories, and personnel are, therefore, distinctly advantageous. Recognition of the complexities of this service on the part of medical students and interns would eliminate its use in unnecessary cases.

It is suggested that thirty minutes be set aside three times a day for the serving of the meals, and that during these periods new admissions, discharges, and all other distractions except emergencies be withheld.

Some typical hospital menus. *Hospital Management* **29,** 84–85 (1930)

Typical menus from the public hospitals in Aurora and De Kalb, Illinois, are given as a guide to institutions not employing a dietitian. Though the menus are not unusual in any way and make no distinction between light and soft or clear and milk liquid diets and have no accompanying explanation, the list might well be used as a skeleton on which to build other menus.

The purposes of a personnel department, WILLIAM R. NEEDHAM. *Hotel Management* **27,** 218 (1930)

In addition to the usual duties of a personnel office, this article emphasizes the necessity for a trained director and the advantages of careful personal interviews for the placement, promotion, and transfer of employees.

Haddon Hall of Atlantic City, JOHN WILLY. *Hotel Monthly* **38,** No. 442, 34–64 (1930)

A discussion of the history, organization, and management of this hotel in which certain unusual features are found, notably the methods of training employees. Maintenance for employees is supplied in a separate hotel owned and operated by the company where there are facilities for rest, recreation, and medical care. Floor plans are given of the hotel kitchens and serving rooms, and lists of equipment and furnishings are included.

The diabetic diet, C. D. CHRISTIE and E. M. GERAGHTY. *Hygeia* **8,** 231–232, 272–277 (1930)

A very important part of the treatment of diabetics is the care given to their diet after they leave the hospital. The dietitian must have sympathy with and understanding of the actual home conditions and must fit the diet as well as possible into the dietary habits of the family. Menus and recipes which might be helpful in such out-patient treatment are given.

Breakfast at school, NELLIE GUSTIN. *Hygeia* **8,** 240 (1930)

Breakfast habits are taught in five elementary schools in Cleveland by serving model health breakfasts at the schools, by making attractive health booklets of breakfast menus as a gift for the mothers, and discussing and demonstrating the nutritional aspects in terms which the children understand and enjoy. The change from the coffee-and-cake breakfast improved the children's work and physical condition and thus impressed

the parents with the importance of good foods. The next project to be tried is vegetable luncheons to create the proper interest in vegetables.

Central food service in the Albany Hospital, VIRGINIA HOWARD RAY. *J. Am. Dietetic Assoc'n* **5**, 198–207 (1929)

Modified central service as worked out in the Albany Hospital is described. Among the advantages of this service other than financial gain is the provision for better control of both food and waste. Costs per person per day in 1927 with ward kitchen service were: $0.62 for raw food and $0.1742 for labor (service $0.0954, preparation $0.065, and administration $0.0138); and those in 1928 to 1929 with central service, $0.53 for raw food and $0.1377 for labor (service $0.0672, preparation $0.0472, and administration $0.0233). Total breakage of china and glassware averages $0.009 per patient per day. Cooperation between departments is an imperative feature for central service and is secured only by maintaining a high standard of service, which, in turn, necessitates efficient equipment and reliable help.

The training of student dietitians, MARY W. NORTHROP. *J. Am. Dietetic Assoc'n* **5**, 208–211 (1929)

The student dietitian should be given a fair return for her time and labor. This entails giving her a broad training, with as much understanding as possible of the organization of the hospital and the problems of all the various groups which work for the well-being of the patient. More consideration for her coworkers seldom fails to bring more cooperation from them. She should also be given an opportunity for contact with patients to enable her to learn to manage them and to realize that it is the patient himself, not simply the disease, that is being treated; and that medication, nursing care, special treatments, and diet work together, no one of them being complete without the others.

Cafeteria management in large hotels, MARGARET G. BROWN. *J. Am. Dietetic Assoc'n* **5**, 212–214 (1929)

The duties of cafeteria managers in large hotels, though frequently open to dietitians, consist at present, in many instances, of responsibility for equipment, cleanliness, counter-arrangement, requisitioning of prepared foods, and training of dining room employees. Menus are planned by the hotel chef, and the food is prepared under his supervision and according to his recipes. Written directions for the employees under the cafeteria manager are considered advisable as well as personal instruction and supervision and demonstrations by experienced employees. Semi-monthly meetings may profitably be held with employees for discussion of such matters as hotel policies and the attitude toward guests.

Careful hospital planning promotes economical administration, ROBERT E. NEFF. *Modern Hospital* **33**, No. 6, 61–68 (1929)

The new General Hospital of the University of Iowa is described as ideally located. A subway connecting various buildings makes centralized service for kitchen, storeroom, linen room, and administration possible. The kitchen and dining-room space is at the rear of the first floor. A central dishwashing room adjoins the main kitchen.

Food is conveyed from the kitchen by subway in electrically heated food trucks. Tray trucks, each containing twenty trays, completely set up for individual service, follow the food trucks into the ward serving-pantries; there the food is

placed on the trays and delivered to the patients. Soiled trays are collected and placed in the tray cart which is then removed to dishwashing unit.

The central linen room is in the service sections of the building. The linen is handled on the exchange plan.

Instructing patients in matters of special diet selection, MARY A. FOLEY. *Modern Hospital* **34,** No. 1, 130 (1930)

Interesting, illustrative material is given which is used by the Mayo Clinic in educating the public as to normal diet and its variations for such conditions as obesity, constipation, and gastric ulcer.

Two problems of a dietitian, MARY W. NORTHROP. *Modern Hospital* **34,** No. 2, 126–130 (1930)

The first problem of the dietitian here considered is the one arising from the fact that her duties cover a wide range in the diverse fields of food purchasing, food production, normal nutrition, diet therapy, research, teaching, equipment engineering, housekeeping, economics, and accounting. If she is to keep abreast of the times in these fields and constantly increase her usefulness to the hospital, she must be relieved of the routine nontechnical tasks which now consume too much of her energy. The hospital must follow the example of industry in providing its professional employees with sufficient clerical assistance for this purpose.

The second problem taken up concerns one of the chief reasons for the constant dissatisfaction with hospital food, namely, that the dietitian is not given enough money to make it possible to produce really good food. She buys foods and hires labor in the same markets as the restaurateur. She usually has about fifty-five cents to purchase raw food for a day's meals, and thirty-one cents for labor. A satisfactory day's meals can be bought in a restaurant at a cost to the patron of two dollars and sixty-five cents. These meals cost the restaurant manager about 93 cents for food and 42 cents for labor.

Selecting, laying, and maintaining linoleum floors, E. V. CARLQUIST. *Nation's Schools* **4,** No. 6, 53 (1929)

Satisfaction from linoleum depends largely on the selection of the proper type for the particular place in which it is to be used, on a faultless job of laying, and on suitable care thereafter. The floor should be well cleaned, a layer of 1½-pound builders' deadening felt (about ⅛ of an inch thick) pasted down, and the linoleum cemented on top of this felt lining. The application of a nitrocellulose lacquer finish gives the floor an excellent appearance which is maintained by daily brushing or dry mopping and occasional washing with a mild soap and warm water. Linoleum floors are sometimes waxed and polished.

Industrial research at Hawthorne. An experimental investigation of rest periods, working conditions, and other influences, G. A. PENNOCK. *Personnel J.* **8,** 296–313 (1930)

By checking the output of workers in a telephone assembling plant under test conditions, the following important findings seem to have been established; the amount of sleep has a slight effect upon output; emotional status and home conditions affect performance: rest periods increase daily production: a buoyant or depressed spirit affects production; and the mental attitude of the employee is the largest single factor governing efficiency.

Improving employee relations: a plan which uses data obtained from employees, M. L. PUTNAM. *Personnel J.* **8,** 314–325 (1930)

As a result of the study of personnel efficiency in the shops of the Western

Electric Company in Chicago, it appeared that the relationships between the employer and the employee and the attitude of the employee toward his work were of primary importance. Therefore, a system was worked out whereby trained interviewers heard the comments of employees. The conversational method was used, and every attempt to secure the confidence of the employee was made. The interviews were also used for the training of supervisors. The result was better supervision and more contented employees.

Fatigue, morale, and output, STUART CHASE. *Personnel J.* **8,** 333–337 (1930)

The mechanization of industry has raised the frequent criticism that workers are being turned into machines and that work is becoming monotonous. For a rather large group of people, the present writer considers this true. Of these, some have a dull mentality and are content with monotony. Others suffer in efficiency and health from long hours of mechanical repetition. For such cases, the study of working conditions will eventually increase output and profits.

Employees want to be treated as human beings, MALCOLM PARKS. *Restaurant Management* **26,** 164–166 (1930)

In addition to sound employment policies such as a careful introduction to the job, regular wage increase, promotion, and vacation, this manager of a chain of soft-drink stations introduces the unique feature of granting an employee leave for six months to try other jobs and permitting him to return at the same salary he was receiving when he left.

Cost chart reduces breakage $2,000 in one year, RAE O. WEIMER. *Restaurant Management* **26,** 181 (1930)

A chart showing costs of kitchen and dining-room utensils and dishes which was used by the Goodyear Tire and Rubber Company in connection with an educational campaign for kitchen and dining room employees, is reported to have reduced breakage from $7,251.08 in 1928 to $5,000 in 1929.

Planning interesting meals, MILDRED CHASE COOKE. *Western Hospital & Nurses Rev.* **14,** No. 6, 38–39 (1930)

Difficulty with employees in a hospital may frequently be traced to inadequate or poorly prepared meals. For all meals served in the institution, the dietitian should observe such fundamental principles of menu planning as contrasts in flavor and texture and unit balance.—

M. DE G. B.
G. M. A.

TEXTILES AND CLOTHING

Contributed by the staff of the Division of Textiles and Clothing, Bureau of Home Economics, United States Department of Agriculture

Cleaning and protecting lamé fabrics, FRED GROVE-PALMER. *Am. Dyestuff Rept'r* **19**, 80–82 (1930)

The lamé fabrics or metallic cloths used for upholstery, dress materials, and shoes tarnish rapidly, especially in the cheaper fabrics in which alloys of copper are used instead of gold. The tarnish on these materials is due to the formation of sulfides of the metals from sulfur fumes and moisture in the atmosphere and may be removed from the yard cloth by running it through a dilute solution (1 to 2 per cent) of sodium cyanide at 40 to 50°C. and rinsing in warm water; sodium hyposulfite in a 1 to 2 per cent solution and a dilute solution of potassium oxalate are also effective. Tarnish on silver-threaded fabrics may be cleaned with a dilute ammonia solution. Metallic fabrics may be protected from tarnish by treatment with a solution of cellulose nitrate, for which a formula is given and which will form a thin and invisible covering. The treated fabric has no odor, is very little stiffer, and has the same feel as the untreated material; if the surface is protected by packing paper, it will keep well. —M. S. F.

An investigation of some of the fabrics used in the manufacture of underclothing, CHARLES SNELLING and ALAN BROWN. *Am. J. Diseases Children* **39**, 9–17 (1930)

This paper reports a study of such properties as heat retention, moisture absorption, irritation produced on skin, and durability in various fabrics used for underwear and diapers. The underwear materials included rayon, fleeced-lined cotton, mercerized cotton, unbleached cotton, wool, wool-and-cotton, and two-layer fabrics of wool and cotton; in the last, the wool was on the outside and insured heat retention while the bleached cotton on the inside, next to the skin, absorbed body moisture and reduced irritation. The diaper fabrics studied were knitted cotton, birds' eye, flannelet, and canton flannel. The knitted cotton was found to absorb rapidly, fit the body, and be soft, elastic, and durable.—M. B. H.

Notes on shirting. *Bull. Laundryowners Nat'l Assoc'n* **13**, No. 2, 13 (1930)

The "Sanfronizing process" is a new commercial method for pre-shrinking shirtings without laundering. It consists in the readjustment of the fabric to its original, "pre-finish" condition, and is supposed to insure greater stability of the fabric when washed by the customer.

An innovation in the construction of work shirts, intended to increase their durability is mentioned; it affects principally the yoke, which is subjected to the greatest strain because of shoulder and bending movements.—K. M. D.

Laundering of celanese, GEORGE H. JOHNSON. *Bull. Laundryowners Nat'l Assoc'n* **13**, No. 2, 19–21 (1930)

With the increasing manufacture of celanese, its laundering qualities will require practical consideration. Besides the usual precautions in the washing process, it is essential to avoid the use of hot irons. This material tends to melt rather than scorch at high temperatures. Specimens containing hygroscopic moisture only were found to stick lightly and instantaneously at 387°F. and to become puckered and glazed at 421°F. Certain

so-called "iron-proof" samples, however, gave no indication of glaze or melting even at 500°F.—K. M. D.

Rayon yarn testing, H. A. HAMM and R. E. STEVENS. *Bur. Standards J. Research* **3,** 927–936 (1929).

A method for obtaining the stress-strain relations of wet textiles is described, which is applicable to rayon yarns at various temperatures. The breaking strength of these yarns when wet at room temperature (20°C.) is found to be less than 50 per cent of the dry values but the stretch is greater in the wet yarns. —K. M. D.

Need for garment size standards, RUTH O'BRIEN. *Commercial Standards Monthly* **6,** 168–169 (1929)

The need for size standardization of ready-to-wear garments is being felt acutely by all connected with this rapidly expanding industry. Most garments are smaller than is indicated on the labels they carry. In fact, there is practically no garment on the retail counter today large enough for a normally developed child of the age for which the garment is marked. The set of measurements used by one manufacturer for a garment of a given bust measurement or age is not always the same as the set used by another. Most of the measurements being used, seem to be the result of traditional ideas modified by individual experience and such tables of measurements as are available. The need for garment size standards is of economic importance not only to manufacturers and distributors but also to homemakers who must buy clothing, patterns, and yardage.—R.E.E.

Do your rug salesmen know these facts? GEORGE SCHWEPPE. *Dry Goods Economist* **84,** 61 (1930)

Although this article is written for rug salesmen, it gives in a clear, concise manner with few technical terms the distinguishing characteristics of Brussels, Wilton, velvet, tapestry, chenille, and Axminister rugs.—B. M. V.

Spanish textiles, JANE TEN BROECK. *Good Furniture & Decoration* **33,** 141–146 (1930)

An increased interest in Spanish provincial furniture has stimulated a demand for the textiles which originally accompanied it. The homespun cloths originally used, included distinguished and interesting examples of peasant weaving and embroidery and patterns which are still favorite subjects for reproduction in remote districts. Late in the 17th century these designs were influenced by the printed India cottons then introduced into Spain; Persian motifs—beasts, birds, human figures, flowers, trees, and butterflies—also appealed to the Spanish designer and printer. Later influences were those of Grecian art and of the age of Louis XVI. Many patterns are described in detail, and suggestions are given for adapting these old designs to present-day reproduction. The article is profusely illustrated.—B. M. V.

Early American coverlets. *Good Furniture & Decoration* **33,** 329–332 (1930)

This descriptive article includes lists of the vegetable dyes used by early weavers and a few dyeing recipes obtained from mountain women.—B. M. V.

Artificial soiling of cotton fabrics preparatory to laundering studies, ELIZABETH HILL. *J. Agr. Research* [*U. S.*] **39,** 539–550 (1929)

The author reports experiments carried out at the Bureau of Home Economics in developing a standard soiling formula for the preparation of artificially-soiled cotton fabrics. Investigation of the various

materials used by other experimenters in this line showed that a commercial suspension of graphite in oil was the most satisfactory material to furnish an equivalent for soot. Olive oil, tallow, and mineral oil were selected to represent saponifiable vegetable and animal oils and non-saponifiable oil, respectively. Albuminous material, the only other type of soil commonly found on clothing aside from stains, was not included because of the limitations in temperature range that would be required in washing experiments.

Photometric measurements of brightness were used to determine uniformity of soil and efficiency of washing tests, and proved much more valuable than the usual method of weighing to determine removal of soil. Of various methods tried for applying the soil to the fabric, the one which gave the most uniform distribution was a small agitator type of washing machine. Desized cotton sheeting was sufficiently uniform in construction to duplicate soiling effects.

The report includes a summary and critical review of the experimental work of 17 other investigators.—O. P. H.

Transmission in the ultra-violet of paraffin coated cloth, VLADIMIR LUBOVICH and MARGARET MALTBIE. *J. Optical Soc. Am.* 19, 411–415 (1929)

With increasing interest in the use of ultra-violet radiations in therapy and in animal husbandry and with greater and greater use of these radiations in chemical, physical, and biological laboratories, there has come a demand for inexpensive and easily obtainable substitutes for fused quartz. The materials considered in this investigation are Flex-o-glass, a white cloth coated with what is apparently paraffin, a paraffined cheese cloth prepared in the laboratory, and two glass cloths. Although these materials transmit on the average less than 10 per cent of the incident light, they all transmit in the ultra-violet region of the spectrum. The intensity of the short ultra-violet light transmitted is increased by exposure to sun and still further increased by exposure to a mercury arc lamp. These substitutes for fused quartz should prove useful in animal husbandry where large quantities of such materials are necessary and where danger of breakage is comparatively great. Probably it would also be profitable to use them in laboratory work where a waterproof substance is desired which will transmit in the ultra-violet region and where a high percentage of transmission is not an important factor.—M. B. H.

Mothproofing, M. G. MINAEFF and J. H. WRIGHT. *Melliand* 1, 1511–1527 (1930)

The authors, who are on the staff of the Larvex Corporation, here compare the efficiency of different mothproofing compounds and methods. Larvex, a solution containing sodium silicofluoride and some aluminium salt, was found superior to sodium fluoride and the cinchona alkaloids recommended by Jackson and Wassel (*Ind. Eng. Chem.* 19, 1175, 1927.) The present authors have also obtained promising results with certain organic compounds containing nitrogen and sulfur (thiourea and phenylthiourea) and give a detailed report of their experimental work.

Spraying is considered an unsatisfactory method of application unless it penetrates beneath the surface, but absolute protection is said to be obtained if the material is passed through a very dilute solution of the mothproofing preparation in the finishing process—a method not in common use because dyers fear such treatment may affect the color of the material.—O. P. H.

Ornamentation by means of screen printing, A. H. GRIMSHAW and G. W. SEARELL. *Melliand* **1**, 1541–1546 (1930)

Screen printing is a recent modification of stencilling that has become very popular for printing silks because of its lower cost as compared with the expense of the copper rolls used in machine printing. The screens are merely pieces of finely woven silk voile stretched on wooden frames, usually 40 inches square, but easily made larger if desired. It is really a method of hand printing, but much faster than block printing, and has the further advantage that the screens can be kept for repeated use.

The design is drawn on paper, from which it is traced on the screen by laying the latter over the paper design on a glass-topped table fitted with electric lights under the glass. A separate screen is made for each color. The whole surface is painted over with a special lacquer except in those portions which are to appear in the color in question. The material to be printed is stretched and held by pins on a steam table; one color screen after another is laid on the cloth and the dye is forced through the screen by hand, using a bevel-edged board. A whole pattern can be completed on a 60-yard piece of cloth in less than 30 minutes.—O. P. H.

An automatic color-matching machine. *Science Supplement* **71**, No. 1831, xii, xiv (1930)

This machine, which writes a permanent record of a color in ten seconds, is able to distinguish colors that appear identical to the trained eye. "The heart of the machine is a spectroscope that analyzes the color to be studied, while its eye is the same magic lamp that has made possible both talking movies and television, the photo-electric cell."—M. B. H.

Gewebe aus Aluminiumfäden [Fabrics made from aluminium threads], KARL MICHSCH. *Spinner und Weber* **47**, 12 (1929)

Aluminium threads can be obtained from thin metal sheets and spun into a fabric as desired. Fabrics of this nature are suggested for sport costumes as well as for the use of fliers and auto-travelers. The author believes aluminium coats could be lined with such materials as leather or fur for warmth.

The editorial comment is added that theatrical costumes made some years ago from aluminium fabrics were bulky, somewhat like coats of mail, and heavier than expected. However, since the material is fireproof and moisture-tight, it may prove practicable.—K. M. D.

The onward march of fabric footwear, HELEN HANEY. *Textile World* **77**, 29–31, 44 (1930)

This article describes the increasing use of various fabrics for different types of slippers and shoes, and the other uses of textiles in the linings, backings, and other parts of shoes. The statement is made that shoe cloth must pass rigid serviceability tests; it must withstand 100 pounds pull and must be so woven that it will not crack or split with the action of the foot in walking.—B. M. V.

MISCELLANY

Club Programs on Consumer Purchases. A preliminary circular on this subject, which was referred to editorially in the March JOURNAL, was issued in mimeographed form late in February and is available on request to the American Home Economics Association, 620 Mills Building, Washington, D. C., or to the Bureau of Home Economics, United States Department of Agriculture, Washington, D. C. It is expected that an amplified revision will soon be printed.

Washington Child Research Center. A recent list of publications by members of the staff of the Center from its establishment in the autumn of 1928 to January, 1930, includes 17 entries. The majority of them are contributions to periodicals in the fields of psychology and education, though the book "The Process of Human Behavior" by Mendel Sherman, the director of the Center, is also there. Ten other papers are listed as to appear during 1930.

Lions, Light, and Rickets. Artificial sunlight was given to three lion cubs at the London Zoo during the dull weather in order to prevent rickets. According to *The Times* [London] *Educational Supplement*, the cubs climbed by themselves into the basket which was placed directly under the lamp.

Terrapin and Ultra-violet. Diamondback terrapin have been under investigation for some years at the laboratory of the United States Bureau of Fisheries at Beaufort, North Carolina, and in 1928 a new brooder house made it possible to speed up their development to the marketable size by feeding them throughout their first winter instead of allowing them to hibernate. At the same time, the effect of ultra-violet rays on growth was studied by keeping like lots of animals, some under ordinary window glass and some under cel-o-glas. According to an article by S. F. Hildebrand, superintendent of the laboratory, in the *United States Daily*, the average length attained by the animals under cel-o-glas was 31.9 millimeters; and under window glass, 32 millimeters—results which do not seem to warrant the use of the cel-o-glas, especially as its cost was one-third greater than that of window glass and it lasted scarcely one year.

Your Child's Teeth. Dr. Percy R. Howe has prepared a simple, sensible, authoritative discussion of this subject which has been issued for free distribution as United States Department of Labor, Children's Bureau, Folder No. 12.

How to Know Color. This is the title of a 32-page pamphlet by Ellen Hillstrom, which is intended for use in studying color and includes a variety of helpful diagrams (some of them printed in color) as well as discussion of the principles of color harmony. It is issued as a special circular of the Extension Service of the College of Agriculture, University of Wisconsin, and is on sale for 11 cents a copy.

The Value of Art in Industry. In a recent radio talk, Assistant Secretary of Commerce Klein emphasized the added value which beauty gives to an object. He called attention to the fact that Swedish industry has so generally recognized this principle that advertisements of the forthcoming exposition of national products in Stockholm use the slogan "More Beautiful Things for Everyday Use."

What is a Farm? A farm is defined by the Census Bureau as all the land farmed by one person, whether it is three acres or three thousand. This apparently simple definition was arrived at after long study in which the Department of Agriculture took part. Its significance is discussed in *The Official Record* of the Department for March 20.

Women's Work in Home and Family. Press reports tell of an exposition entitled "Frauen Wirken in Haus und Familie" held in Düsseldorf, March 8 to April 13. The five sections dealt respectively with the house, food and household management, hygiene, the child, and the family. The underlying idea was said to be rationalization of housekeeping to promote economy of time, energy, and money, and thus to strengthen the family ties whose loosening is considered a social danger.

Standardization in School Notebooks. The Normenausschuss der deutschen Industrie, the German industrial standardizing agency, has reduced the sizes of school notebooks to three, and these have already been adopted by trade and commercial schools.

Household Occupations in Reformatory for Women. The régime in the new Illinois reformatory, the establishment of which owes much to the active interest of women's organizations, is based on the theory that delinquency and idleness are closely connected, and that a woman may be aided to overcome the handicap of delinquency by equipping her with a knowledge of some useful occupation, beginning with the simple household ones and advancing to some other vocation to which she is adapted. As described in the Welfare Bulletin of the Illinois Department of Public Welfare, the new institution is on a farm near Dwight and the residents are to be housed in cottages, each holding not more than twelve and governed by its own matron.

Electric Household Refrigeration. W. T. Ackerman brings together interesting data from refrigerator tests made in the New England rural electrification project in Bulletin 244 of the New Hampshire Agricultural Experiment Station. According to this study the household refrigerator is one of the most serviceable and desirable major electrical units for the farm home.

The Electric Water Heater. An exhaustive study of the theoretical and practical problems involved in the adoption of electric water heaters was described by H. G. D. in a recent National Electric Light Association Bulletin.

Home Economics Adviser. Mrs. Gladys Beckett Jones has been made home economics adviser to the Priscilla Proving Plant in Newton Centre, Massachusetts.

Portable Playgrounds. Chelsea, Massachusetts, has worked out a practicable scheme for supplementing its regular playground space. A set of playground equipment—swings, slides, teeters, and balls—is brought to a different street each day, then the street is closed to traffic, and two instructors are provided to arrange the games and contests.

Problems for Parent Education. This pamphlet, containing "outlines of major problems confronting leaders in parent education," which has been edited by Eduard C. Lindeman and Flora M. Thurston, is the outcome of the conference called by the National Council of Parent Education in Atlantic City in 1929, and may be obtained from the

Council's headquarters, 41 East 42nd Street, New York City.

Italian Manual on Child Welfare. The United States Children's Bureau reports that a substantial money prize has been offered in a competition of Italian physicians by the Royal Hygiene Society of Milan for the best manual dealing with the food, clothing, and physical and mental training of children, and with their recreation, vocational training and guidance, character education, and the problems of their sex life. It is stipulated that the book shall be written in simple language for the use of parents, teachers, and other persons who deal with children.

Rent Allowances for Children. The National Housing and Town Planning Council of England has suggested that a rebate on the rent of the minimum standard municipal houses should be made in the case of families with three or more children having a maximum weekly income of 55s (about $13). English post-war housing schemes are said to have greatly benefited the better-paid workers, but have not emptied the slums because rents for the new municipal houses are too high for the poorer families. Certain small municipalities have adopted the plan of making a rebate of 6d a week off the rent for each child, balanced by 1s added for each lodger.

Women in 5- and -10-cent Stores. Considerable comment has been aroused by a bulletin by Mary Elizabeth Pidgeon of the Women's Bureau which reports an investigation made in 1928 of the conditions of women's employment in 179 5-and-10-cent stores and limited-price chain department stores in 18 states. Their median earnings were $12 a week, more than 80 per cent of the women working 6 days in the week. The official designation of the bulletin is United States Department of Labor, Bulletin of the Women's Bureau, No. 76, and it is for sale by the Superintendent of Documents, Washington, D. C., at 10 cents a copy.

Subscription Books. To aid schools and homes in selecting reference works from among the many books and sets presented by canvassers, the American Library Association has begun issuing a new quarterly *Subscription Books Bulletin*, which will be available in many libraries and will try to give reliable, timely information as to the character of such books.

League of Nations Association. Announcement was made in February that, since the reorganization whereby the American Committee of the Geneva Institute of International Relations became a part of the League of Nations Association of the United States, the distribution of general information regarding the League of Nations' activities would in the main pass from the Geneva office to the branch offices of the Association in the United States, to which application should be made for such material. A list of these 23 offices may be obtained from the League of Nations Association, Inc., 6 East 39th Street, New York City. The official documents of the League may be bought from the World Peace Foundation, 40 Mt. Vernon Street, Boston. The other work of the Geneva office will go on as heretofore.

NEWS NOTES

GENERAL

American Library Association. Two new aspects of adult education—alumni and radio education—will be discussed at the fifty-second annual conference of the American Library Association, to be held at the Biltmore Hotel, Los Angeles, June 23 to 28. More than 2,000 of the 12,000 members of the Association are expected. Forty committees will have round table meetings. Work with children in the rapidly developing school libraries throughout the country will be discussed; and the Newbery medal for the best American children's book of the year will be awarded.

Brazil Summer School. After a successful experiment in 1929, a Brazil Summer School session for North Americans is being arranged in Rio de Janeiro for July 14 to August 4, 1930. It is to be under the supervision of the Brazil Research Institute and aims "to present a comprehensive view of Latin American problems, both old and new, with special reference to those of Brazil. The triweekly afternoon trips tie in as closely as possible with the morning lectures." American teachers who wish to give special study to primary and secondary education will be assisted by the Brazilian Education Association. A special tour to include the session is being planned for those coming from the United States. Full information regarding both the courses and the tour can be obtained from the Institute of International Education, 2 West 45th Street, New York.

International Council of Women. The quinquennial meeting of the Council will be held in Vienna, May 27 to June 9. Special tours have been arranged for Americans interested in such subjects as race betterment, international relations, problems of rural women, and public health, of which the leaders will be women particularly familiar with these subjects and which will include visits to many places of special interest in connection with them as well as attendance at the Quinquennial.

International Fur Exhibition. Eighteen countries and many private concerns are participating in the exhibition which is to open in Leipzig, Germany, on June 1, and which will include all phases of the fur trade and the fur industry, from weapons and traps to finished garments and accessory materials such as linings. In connection with the fur exhibition, there is to be an international hunting exhibition, one of live fur-bearing animals, and other features likely to attract the general public as well as those connected with the fur business.

National Conference of Social Work. At the Conference in Boston, June 6 to 14, problems of the family and children will be much to the fore. Speakers and subjects at the general sessions will include, among many, George W. Wickersham on "Law Observance" and Wesley C. Mitchell on "The Economic Basis of Social Progress." At a meeting of the division on the family, E. C. Lindeman will discuss the newer parental education, and Joanna C. Colcord will speak on "Strengths in Family Life."

Nursing Organizations. The biennial convention of the three national organizations of nurses (the American Nurses

Association, the National Organization for Public Health Nursing, and the National League of Nursing Education) will be held in Milwaukee, June 9 to 14.

Agricultural Engineering Experiment Stations. At a hearing held on February 26 on the bill to establish such stations in connection with the land-grant colleges, Dean Marsten of Iowa State College and Professor J. B. Davidson, representing the American Association of Agricultural Engineers, spoke in favor of the measure. It was pointed out that the work thus made possible would include farm home problems, such as the use of electricity with household equipment.

International University Organization. At the Congress of Rectors, Deans, and Educators, which met in Havana in February, a permanent international university organization was effected with headquarters in Havana. It was decided to hold the first international congress in Florence, Italy, in 1932. The findings of the Havana Congress will be transmitted to the American member governments through the Pan-American Union. Nineteen countries, including several from Europe, were represented. The chairman of the delegation from the United States was Dr. James Brown Scott.

Salons des Arts Ménagers. This annual exhibit of household arts took place in the Champs-Elysées Palace January 30 to February 16, 1930. As in previous years, it brought together all kinds of home furnishings and appliances, and included demonstrations of considerable educational value.

White House Conference on Child Health and Protection. Meetings both of Dr. Stanley's subcommittee on the family and parental education and of Dr. Thomas D. Wood's on school health were held in Atlantic City at the time of the meetings of the Department of Superintendence, National Education Association, and in Washington a few days later.

Safety for Walkway Surfaces. Drawing up a safety code for walkway surfaces is the function of a sectional committee recently appointed by the American Standards Association. Pertinent characteristics of such surfaces include "resistance to slipping, freedom from the tripping hazard, durability, flammability; insulation . . . around electrical apparatus; general and maintenance requirements."

Field Study Course in Europe. Dr. B. R. Andrews of Teachers College, Columbia University, will for a second time take a class to Europe this summer to study comparative standards of living in England, Amsterdam, Brussels, and Paris. The class will sail from New York on May 31.

ALASKA

Alaska Agricultural College and School of Mines. This year the college is offering three homemaking short courses, each of ten weeks' duration. Twenty women were enrolled in the fall course.

As a result of experiments with cranberries carried on by the foods classes, a number of cranberry recipes have been developed and published in mimeograph form.

Lola M. Cremeans, formerly on the faculty of the University of Minnesota, is the new head of the home economics department.

Mrs. H. C. Fohn-Hansen, formerly Lydia Jacobsen and head of the department, is traveling in the States but expects to return to make her home in Alaska.

Allene Sewell, a part-time instructor at the University of Minnesota last year, is the new instructor in clothing.

Martha Park, former instructor of

foods, is this year managing a tea room in Seattle.

In January the home economics department gave a tea, at which women of the short course classes and women of Fairbanks were guests. Allene Sewell gave a talk on the new silhouette, and Lola Cremeans reported on the work with Alaska cranberries.

Territorial Schools. The schools in eight towns are now offering home economics, and the following instructors have been appointed for the year: Anna Sloan Walker, Anchorage; Annie Carlson, Cordova; Lucille Pepoon, Douglas; Marie Banks, Fairbanks; Helen Gray, Juneau; Leona Friend, Ketchikan; Bertha Lero, Petersburg; and Faye Plank, Wrangell.

ARIZONA

University of Arizona. Jane Hinckley, federal agent in home economics for the Pacific region, and Mrs. Mildred Weigley Wood, state supervisor of home economics education, visited the University on February 24 to 26. They were entertained by the girls of the Home Management House and were guests of the Home Economics Club at dinner, following which they gave brief talks to the group.

The members of Kappa Omicron Phi, the honorary home economics society, are sponsors of the new home economics club organized in February.

The class in child development and guidance is making child contacts in the day nursery opened by the Service League, a philanthropic organization of young women of Tucson. A number of young men in the class have undertaken to make outdoor play equipment.

Three courses, clothing construction, advanced clothing, and textiles, are to be offered by the department during the summer session. They will be taught by Olive Gallatin.

Extension Service. During a part of February and March, extension schools were held in the northern and eastern sections of the state. Rosa Bouton, home demonstration agent, held the first in Navajo and Apache counties, while Hortense White was responsible for the second in Graham and Greenlee Counties. Frances Brown, state home demonstration agent, assisted in both.

Mrs. Avis Talcott Wells, Pinal County home demonstration agent, brought a group of women from that county to the University on February 21. They were welcomed by President Shantz and Dean Ball and then taken on a tour of the campus, including the girls' dormitory and the University dining hall and kitchen. Talks were given by several members of the home economics staff, and a visit was made to Dr. Smith's nutrition laboratory. The students in the Home Management House entertained the group at tea.

Student Clubs. Mrs. Helen Wood Gould is state sponsor for student clubs. The clubs of Phoenix Union High School and of Morenci are the first to affiliate with the State and American Home Economics Associations.

CONNECTICUT

Connecticut Home Economics Association. The state was well represented by the 120 who were present at the morning and afternoon sessions of the winter meeting at Bristol. The opening address by Superintendent of Schools, Karl A. Riche, was not only the usual word of welcome but an able presentation of problems in present-day home economics as they appear to a school superintendent.

The Bristol High School's local committee were charming hostesses, and their arrangements for instructional exhibits in clothing and electric appliances ably supplemented the program.

District Meetings. In accordance with

the plan for the development of district home economics meetings, one was held at Danbury on March 29. Mr. Karl A. Riche spoke on "A Man's Viewpoint of Home Economics Today and Tomorrow." Other topics of discussion were high school student clubs and the present need for curriculum changes in home economics. Mrs. Earl A. Elder, formerly associate professor of home economics in the University of Nebraska, who, with her husband, is studying at Hartford Theological Seminary, told about home economics in Egypt.

Hartford. Boys at the Hartford High School are learning to cook in classes which meet weekly after school hours. They receive credit commensurate with that given for the same time devoted to practical laboratory work and assigned home study.

New Britain. An exhibition of the work of all departments is being planned for the first week of April at the two high school gymnasiums. A display of cooked foods, posters depicting different phases of the work in cooking, and a cooking demonstration will be features of the home economics exhibit.

New London. At the Chapman Technical High School home economics courses are developing along extremely practical lines. The domestic art includes needlework, ranging from the making of caps and aprons to ladies' tailoring and millinery. In domestic science, cooking and serving of meals are covered during the first two years, while the science of nutrition and other technical work relating to the home and surroundings is given in the junior and senior years. F. S. Hitchcook, supervising principal of the school, reports that, textbook presentation having proved inadequate, a blue-print chart of the vitamins A to E which classifies them under such headings as source, function, effects of lack, storage, and stability, has greatly stimulated interest in the subject. Accompanying this chart is a picture of the nutrition experimental room, where the students observe the reaction of white rats to deficiency diets.

DISTRICT OF COLUMBIA

District of Columbia Home Economics Association. A meeting was held at the Red Cross Auditorium on March 20 when Celeste Hodges, interior decorator from Woodward and Lothrop's, spoke on color in the home as expressed in combination of fabrics.

Clothing and Textile Section. At the meeting held at the Bureau of Home Economics on March 10, the cost of clothing was discussed by Mrs. Anne Burg, Mrs. Brycie Gales, Mrs. Ola Day Rust, Katherine Bell, and Dorothea Friesman.

Food and Nutrition Section. The February meeting was held at the Red Cross Auditorium. Mrs. Snyder of the Bureau of Home Economics gave an illustrated talk on a recent trip to a district in South Carolina where pellagra is now very prevalent.

Home Economics in Business Section. At the invitation of Marie Mount, the February meeting was held at the University of Maryland, where the section members were dinner guests of the home economics department. On March 18, at Eleanor Howe's invitation, the section met at the plant of McCormick and Company in Baltimore. The members were shown through the factory and were guests of the Company at dinner at the Lord Baltimore Hotel.

Homemakers Section. Dr. Faith Williams of the Bureau of Home Economics spoke on "Standardization and Simplification for the Consumer" at the February meeting at the home of Mrs. N. R. Ellis. The section held a joint meeting with the Food and Nutrition Section

at the Bureau of Home Economics in March, when Dr. Dunbar, chief of the Food, Drug, and Insecticide Administration of the United States Department of Agriculture, discussed different phases of enforcing the pure food laws.

GEORGIA

Georgia Home Economics Association. A one-year course of study, adopted at the last annual meeting, has been published in bulletin form. This includes three studies which were used in working out the course. A bulletin which includes aids, suggestions, and programs for clubs is also off the press. The first Association news letter and the first student club news letter were mailed in February.

The annual essay contest sponsored by the Association was held on March 10. The Association is also sponsoring a contest for the best original health play this spring. Several high schools are competing.

Georgia State Teachers College. Elva Kleist has a year's leave of absence for study at Teachers College, Columbia University. Myrtle Hewitt of New Hampton, Iowa, is taking her place.

The foods classes prepared and served a banquet to the 250 guests who attended the dedication of the Sanford Field Stadium.

Fulton County. In the high schools of Fulton County, which includes those in Atlanta, uniform tests were given to the girls in the freshman home economics classes. Afterwards the Otis Intelligence Test was given to each girl in order that teachers might compare the abilities of their pupils with their achievements in home economics. This comparison led to a closer study of the individual pupils, and greater effort on the part of the teachers to make the achievement and the abilities of their pupils coincide.

The home economics teachers of the Girls' High School sponsored a correct dress review in the auditorium recently when appropriate, healthful, and economical clothing for girls from eleven to fifteen years old was displayed. They were assisted by a stylist from a local department store, which also furnished most of the garments worn by the student mannequins. Four groups of garments were shown: undergarments, school clothes, street clothes, and clothes for dress occasions.

Student Clubs. *State Teachers College.* The Academy Home Economics Club has been organized into teams, each with its own committee and definite goal. Demonstrations in food preparation and service with practical talks on related subjects have been given before the Mill Community Club. At Christmas, the club obtained publicity by writing newspaper articles to promote the sale of Christmas seals for the anti-tuberculosis campaign. The club has undertaken the care of the birds which make the campus a rendezvous during the winter.

Georgia State College for Women. The vegetable wedding originated by the club is gaining nation-wide reputation.

State College of Agriculture. The Home Economics Club is endeavoring to complete the equipment of the home management home on the campus.

Fulton County High School Club. The club's general objectives are to promote a greater appreciation of the field of home economics, to aid in developing an all-round girl, and to develop a spirit of cooperation in home, school, and community. Miss Reynolds of the National Tuberculosis Association spoke to the club in February.

HAWAII

Vocational Home Economics. Three new home economics cottages were recently opened, one on the Island of Maui

and two on the Island of Hawaii. Each cottage has an average of sixty girls, who receive instruction in all phases of homemaking. The girls at each cottage have at least one baby to care for. The decorating and furnishing of the cottages has been done by the girls, which has given them an excellent opportunity to learn what pleasing surroundings may be obtained with only a little effort and money. In some instances, novel and substantial pieces of furniture have been made by the girls from discarded furniture or drygoods boxes. The training offered at these cottages has become so popular that there is a demand for many more of them.

For the first time in Hawaii, organized homemaking is being taught through home projects. Where, as happens in many cases, the girls are assuming all or much of the responsibility of the homemaking, the schools are cooperating by giving them a definite plan of instruction and work. One of the girls who has been helped is a Chinese girl who, in addition to attending high school, is entirely responsible for a home in which there are a father and 20 children.

IDAHO

Idaho Home Economics Association. The following meetings have been held: Southwestern District at Boise on March 22, with Inez Kent in charge; Southeastern District at Pocatello on March 29, with Julia Pond in charge; and Northern District at Moscow on April 5, with Katherine Jensen in charge. Muriel G. McFarland, newly appointed state supervisor, spoke on "The Home Economics Bookshelf" at each of the meetings.

University of Idaho. Iva Welch, head of the home economics department at the Southern Branch, Pocatello, left January 21 for Kansas State Agricultural College to become assistant in the department of institutional economics. She will carry on graduate work under Mrs. Bessie Brooks West. Gertrude Bryce of California succeeds Miss Welch at Pocatello.

The new service course entitled "The Home," which was introduced this semester, has an enrollment of over forty girls.

Ava Milam, dean of women at the Oregon State College, visited the home economics department on March 7.

Ida Ingalls, Elizabeth Johnson, and Marjorie Eastman of the faculty will leave in July for a European trip.

Phi Upsilon Omicron, the honorary home economics fraternity, is supervising the furnishing of a new girls' rest room on the campus. The chapter entertained all home economics freshmen at a fireside party on February 15, at which time the ideals and purposes of the fraternity were explained.

Dorothy Ellis has resigned as state supervisor of home economics to supervise the home economics work carried on by the Indian Service in the States of Arizona, New Mexico, California, Washington, Oregon, Idaho, and Utah. Her headquarters will be at Albuquerque, New Mexico. Muriel G. McFarland, formerly dean of women and head of the home economics department at Ellensburg State Normal School, has been appointed to Miss Ellis's position.

ILLINOIS

Lewis Institute. Katherine E. Mayes, a graduate of the Institute with the M.S. degree from the University of Colorado, has been appointed head of the home economics department. Miss Mayes will teach at the University of Colorado again for the summer session this year.

Mrs. Elsamarie Hartman, another Lewis graduate, is carrying on the evening classes formerly conducted by Clara Morse.

Lemo Dennis resigned to work for her

doctorate in child care at Cornell. The home management house which she instituted at Lewis is closed this year, the plan being to operate it in alternate years.

M. Arlyn Eilert, who directs classes in textiles and clothing at both Lewis Institute and the University of Chicago, will sail for Europe in June.

University of Chicago. During the first week in March the department of home economics enjoyed the first visit from Dr. Katharine Blunt since she left last September to take up her new duties as president of Connecticut College. Her time in Chicago was divided between the alumnæ of Connecticut College and her many friends at the University. The members of the department entertained for her at dinner and at a tea given in Ida Noyes Hall. Miss Blunt's inauguration as president of Connecticut College will take place on May 16.

Dr. Harry Johnson, director of the Simmons sleep investigation at Mellon Institute, has set up one of his experimental beds at the University Cooperative Nursery School, where a study of postures in sleep of preschool children will be made. Mrs. Marian Jacobsen of the nursery school staff will carry on the investigation under his direction. While he was at the University setting up the mechanism for the study, Dr. Johnson gave an extremely interesting lecture on work already done on adults.

Clyde Schuman, director of the Nutrition Service of the American Red Cross, visited the department recently and talked on the work of her organization to a group of students interested in the social service type of nutrition work.

Gladys Ward and Bernice Wait are to be on the staff at Peabody College during the summer quarter; the former will teach home management and the latter, nutrition.

Mrs. Minna Schmidt of the home economics department gave a talk on "Women Famous in Chicago's History" on March 20 as a part of Mandel Brothers' celebration of their 75th anniversary. She took with her twenty-five girls from the University who impersonated these women in genuine costumes of the period.

At the annual dinner of the Home Economics Club the members were fortunate in having as guest of honor and speaker, Dean Margaret Justin.

Mata Roman Friend, formerly instructor in home economics in the University Elementary and High Schools, is the author of a senior high school text entitled "Earning and Spending the Family Income," which was published in February.

University of Illinois. Mary Whitlock attended the regional conference on research in clothing and textiles called by Lilian Baker at the Kansas State Agricultural College on February 5, 6, and 7.

Edna Gray, clothing specialist in the extension service, has been appointed chairman of the textile section of the American Home Economics Association in place of Helen McCullough, who is absent from the University this year.

Dr. Pauline Beery Mack of Pennsylvania State College visited the home economics department upon her return from the textile conference at Manhattan, Kansas, in February. She talked before an interested group of students on the textile standardization program.

John E. Anderson, director of the Institute of Child Welfare of the University of Minnesota, this winter gave a series of three lectures, the general theme of which was "The Modern Child Development and Parent Education Movement." Attendance at these lectures totaled over two thousand.

The two-day child development and parent education conference held at

Bloomington, Illinois, was sponsored by the McLean County Home Bureau, The Woman's Club, Parent-Teachers Associations, the City Health Department, and the Bloomington Pantograph. Clara Brain, home adviser, was general chairman.

Dr. Genevieve Stearns, research assistant in the department of pediatrics at the University of Iowa Medical School, recently lectured at the University under the auspices of Iota Sigma Pi. Her subject was "Calcium and Phosphorus Metabolism." Dr. Stearns also met with the graduate students in home economics nutrition and discussed some of her own studies concerning metabolism in children.

The unit of the advanced institutional management course devoted to tea rooms is very popular. On March 11, the lovely room ordinarily used for the cafeteria was changed into "Priscilla's Pantry," and the early puritan atmosphere was carried out with all its simplicity and charm.

Extension. Illinois was unusually fortunate during its Farm and Home Week at the University of Illinois to have well-known home economists on the program. Among them were Dr. Margaret M. Justin, Ruth O'Brien, Myrtle Welson, and Dr. Ruby Green Smith.

Additional counties employing county home advisers for the first time are Lee and Woodford. Mrs. Florence Syverud, formerly a home demonstration agent in Kansas, is the adviser in the former; and Luella Selover, previously connected with the Commonwealth Edison Company in Chicago, in the latter. Illinois now has 26 counties employing full time home advisers. Ten other counties are working to secure such appointees.

Fern Carl, who has been a county home demonstration agent in West Virginia, is now located in Rock Island County, Illinois. She is taking the place of Mrs. Ruth Nelson, who was recently married. Eleanor Brandt of Minnesota is filling the position in Tazewell County formerly held by Jessie Heathman, who is now with a chain restaurant company.

Western Illinois State Teachers College. The first Invitational Meet in Home Economics will be held on Saturday, May 3. Entries are being limited to the high schools of the Military Tract in which the College is located.

Vocational Home Economics. The Central Regional Conference called by the home economics division of the Federal Board for Vocational Education was held at the Edgewater Beach Hotel, Chicago, March 3 to 7. Approximately 60 persons were in attendance. Illinois was represented by Anna Belle Robinson, Elizabeth Todd, and Florence King of the University of Illinois, Jessie Rambo of Illinois State Normal University, Eva Colby and Tressie Bonham of Western Illinois State Teachers College, Beulah Coon of the University of Chicago, and Sophia Reed and Adah Hess from the State Department of Education.

Chicago Public Schools. The home economics teachers in the Chicago senior high schools, feeling the need of help along the line of newer methods of teaching, have arranged for a series of lectures pertaining to their work by members of the home economics faculty of the University of Chicago. The first and second lectures were by Beulah Coon on "Newer Methods of Teaching Home Economics." These are to be followed by "The Teaching of Household Mechanics" by Mrs. Heiner, "Points to Emphasize in Teaching Child Care to Secondary School Girls" by Lydia Roberts, and a final lecture on "The Economics of the Modern Home." The group sponsoring them are also hoping to have more lectures at a later date.

INDIANA

Indiana Home Economics Association. The spring meeting of the Association was held in Lafayette on March 28 and 29. The school of home economics of Purdue University and the department of home economics of the Lafayette public schools acted as hostesses. The program opened with a dinner on Friday evening at the home economics building of Purdue University. Following greetings from President Elliott, Dean Mathews, and Mrs. Virginia C. Meredith, one of the trustees of Purdue, the address of the evening, "Home Economics from the Homemaker's Viewpoint," was made by Mrs. Elmer Waters, president of the Lafayette Branch of the American Association of University Women and a master farm homemaker. The Saturday program included a fashion show arranged by Marian Willoughby of the department of clothing and textiles of Purdue University; a talk on "Psychology in the Nursery School" by Mrs. Katharine Read of the department of household administration of Purdue University; a discussion of "Objectives in Teaching Home Economics in the Public Schools" by Adah Hillier, supervisor of home economics in South Bend; a discussion of "Problems in Teaching Child Development in the High School" by Mrs. Laura Gottfried of Sandborn; and an address by Anna E. Richardson of the American Home Economics Association. The Association is cooperating with the State Department of Public Instruction in the preparation of a course of study for home economics in the seventh and eighth grades.

Student Clubs. There are at present 20 student clubs affiliated with the Association, and more are expected to affiliate before the year closes. This number represents a splendid increase over the nine of 1927–28 and the fifteen of 1928–29. Numerous requests have been received by Leona Stuart, sponsor for student clubs, for the club songs and the booklet, "Suggestions for Student Clubs," which is available at fifty cents per copy. The first issue of the Indiana Student Club News Letter was issued in March. It is planned to have two issues a year, one in March and one in September.

Ball State Teachers College. Maxine Coleman is making a study of the home economics curriculum and of the needs of the small high schools of the state. She has selected 100 schools in 66 counties, all of them schools in which the enrollment is from 20 to 55 students.

Butler University. Ida B. Wilhite, head of the department of home economics, has announced that there has been a complete reorganization of the home economics courses so that, beginning next September, students may work for a bachelor of science degree in home economics.

Margaret Emilie Bruner, formerly in charge of the foods and nutrition work, was married to Professor Hersel Hudson of the University of Denver on January 1. Her position in the department is now filled by Helen J. Cade, who recently received her master's degree from the University of Illinois.

Indiana State Teachers College, Terre Haute. Mrs. Cecile LaFollette, supervisor of student teachers in the College Training School, is on leave of absence for the remainder of the school year and studying at Columbia University. Mrs. Mabel Swain is supervisor of student teachers during her absence.

Two new courses are being offered by the home economics department during the spring quarter, "Problems of the Household Buyer" and "Child Development."

Indiana University. Mabel T. Wellman, director of home economics, will spend the summer in Europe.

Elizabeth Sage has written a high school textbook on the buying of clothing which is to be published this spring and in which the problems presented are those that the high school girl will meet in her future buying.

The Junior Home Economics Club held a patriotic party for their February meeting. Short talks on George Washington were given by several of the girls and by a member of the local 4-H Club. The juniors are planning to sponsor a home economics club at the local high school.

Purdue University. Dean Mary L. Matthews gave two addresses before the women's section at the Kentucky Farm and Home Week held at the Kentucky Agricultural College the last of January. She attended the regional conference of vocational education held in Chicago.

Laura Flynn has been appointed instructor in the department of food and nutrition to succeed Mrs. Mary Lawton Wright.

In February Amy L. Howe attended the regional conference which was called at Kansas State Agricultural College to discuss the relations of college departments of clothing and textiles to research in this field.

Edith Gamble took thirteen senior majors in institutional management to Chicago on March 6 on the annual observation trip.

Marian Willoughby, instructor in the department of clothing and textiles, will teach courses in the history of costume and applied dress design during the summer term at Teachers College, Columbia University.

Marie Darst, instructor in the department of applied design, will teach in the art department of Kent College, Ohio, during the summer term.

Anna E. Richardson of the American Home Economics Association organized a conference on child development and parental education, held at the University on March 27 and 28, in conjunction with the annual meeting of the Indiana Association of College Teachers of Home Economics. Members of the home economics teaching staffs of the various colleges in Indiana and a group of city supervisors of home economics attended this conference, which was devoted largely to round table discussions.

Vocational Home Economics. A series of six district conferences of vocational home economics teachers was held during January and February; related art and home projects were the principal topics discussed.

Evansville. The boys' Camp Cooking Club of Bosse High School had as the project for their last club meeting the carving of meats and the duties of a host. The boys are not enrolled in regular home economics courses; but under the direction of the sponsor of their club, Helen Vickery, they are taking this opportunity to learn some things in the field of home economics.

The girls in the advanced class in foods of the Bosse High School who are interested in some phase of catering as a vocation have been grouped into committees to plan for and take charge of the food served at various social functions at the school.

Indianapolis. Seventeen boys from the sophomore, junior, and senior classes are enrolled in the course in camp cookery offered by the food department of the Arsenal Technical Schools. Frieda Ann Bach, instructor of this class, states that the boys are much more interested in food facts than girls. Principles of food selection, marketing, and food preparation are included in the instruction. There are no prerequisites.

Muncie. More than 100 boys are enrolled in the health course taught in the home economics department at Central High School. The main emphasis in this course is on nutrition, and the boys are quite as much, if not more, interested than the girls in acquiring good food habits.

Terre Haute. In the Sarah Scott School all underweight children are sent to the home economics teachers for the health course. As the children attain normal weight, they are turned over to the physical education department. Mrs. Edna Mullins has been in charge.

IOWA

Iowa State College. Frances A. Sims has resigned as head of the textiles and clothing department and in the fall will become assistant to the president, in charge of women's affairs. This is a newly created position which replaces the office of dean of women and entails personnel work exclusively. Miss Sims, who is spending the spring quarter in Europe, will act as head of the textiles and clothing department, however, during the coming summer quarter. The housing of women students will be in charge of Mrs. Madge McGlade, and social affairs are to be under the direction of Mrs. I. A. Merchant.

Ruth Lusby, head of the institutional administration department, has returned after a few months' leave of absence in California. A new member of this department is Ina Pemberton, who recently received the master's degree from Columbia University.

Dr. Mabel Nelson, head of the foods and nutrition department, went to California during the spring vacation via the Panama Canal.

Joanne M. Hansen, head of the applied art department, and Dr. Grace Zorbaugh, associate professor of economics, will each conduct a European travel tour this summer. Mary Gabrielson of the textiles and clothing department is spending both spring and summer in Europe.

The home economics education department has planned two conferences during the summer quarter: The first, from July 14 to 18, on methods of conducting conferences, is to be led by Florence Fallgatter of the Federal Board; the second, from July 21 to 26, on home projects, is to be led by Jessie Harris of the University of Tennessee.

"Factors Affecting Water Extraction by Wringers" is the title of a master's thesis in household equipment presented by Lila Pfautz at the close of the winter quarter. In the same department Clara Graves presented a comparative study of thermostats in electric and gas ovens.

University of Iowa. Through the cooperation and kindness of the Child Research Station, the girls in elementary nutrition have the opportunity of observing and studying the application of the principles of child feeding during the noon lunch hour at the Preschool Home Laboratory.

Lula E. Smith expects to spend the summer in Europe with Elizabeth Shannon of the Maryland Art Institute and a group particularly interested in art.

KANSAS

Kansas State Home Economics Association. The annual meeting was held in Pittsburg on March 21 and 22. The general themes were professional improvement and educational methods. C. W. Miller, director of vocational education in the state, and Dr. Margaret Justin, dean of home economics at the Agricultural College, Manhattan, spoke on the former topic; and Hazel Thompson, state supervisor of vocational home economics, led the discussion on the latter. There were two general speakers

from outside the state: Ruth Atwater of the National Canners Association, who spoke at the banquet, and Dorothy Shank of the American Stove Company. A new feature was a luncheon for representatives of home economics clubs and their sponsors. On Saturday the meetings were held at the Kansas State Teachers College, and the members attending were guests at a tea at the home of President and Mrs. Brandenberg. The Home Management House held open house the same afternoon.

The Association has appointed a committee on standardization and simplification to cooperate with the national committee of the same name, its function is to spread information regarding efforts made to help women with their buying problems, for example, by procuring the labeling of merchandise in such a way that purchasers may know what they are buying. Efforts are being made to reach large groups of women through organizations in the state, such as the Parent-Teacher Associations, the Federated Women's Clubs, and the American Association of University Women. An educational and publicity campaign on the work of the committee through the newspapers and periodicals of the state has been also planned. The committee is composed of a representative from each of the five state institutions and from the state extension service, and homemakers prominent in various parts of the state.

Kansas State Agricultural College. Ruth Wardall of Illinois, Dr. Helen B. Thompson of the University of Southern California, Los Angeles, and Marie Dye, acting head at Michigan Agriculture College, visited the college in March.

About forty students in the foods and nutrition and clothing and textiles departments made the annual trip to Kansas City early in March. The places visited by the foods and nutrition group included a packing plant, a wholesale warehouse and distributing center for all kinds of food, especially groceries, a biscuit factory where crackers and fancy cookies are manufactured, a bakery, and candy, delicatessen, and china shops.

The clothing and textiles people visited a garment factory where children's clothing is manufactured, the house of a well-known make of women's dresses, a factory where only custom-made shirts and other garments for men are made, and an establishment which manufactures unionalls and aviation clothing.

Home Economics Club officers, elected on February 6 for the ensuing year and installed on February 20 by the new installation service, are: sponsors, Mrs. Lucile Rust and Margaret Ahlborn: president, Gertrude Seyb; vice-president, Mabel Roepke; secretary, Miriam Eads; treasurer, Opal Mae Porter.

Kansas State Teachers College, Pittsburgh. An interesting exhibit of Rookwood pottery, displayed from March 11 to 29, was sponsored by the related art classes under the supervision of Mamie Engel.

MASSACHUSETTS

Massachusetts Home Economics Association. The spring meeting, also the annual meeting, of the Association was held in Springfield on April 12. "International Home Economics" was the subject of the day's session, and Helen W. Atwater, editor of the JOURNAL OF HOME ECONOMICS, was the speaker of the morning. Luncheon was of an international nature, with a menu of dishes typical of several countries. Students in native costume from the Springfield International College entertained with music and dancing and explained exhibits of foreign home economics work.

Connecticut Valley Home Economics Association. The mid-winter meeting,

held at the High School of Commerce, Springfield, on February 1, was well attended. Dr. Katharine Blunt, president of Connecticut College for Women, spoke on "Present Needs in Home Economics." Enthusiastic discussion followed the program. Mrs. Lillian Gilbreth's book "Living with Our Children" was reviewed in detail by Martha Judd of the Springfield school department. The home economics students of the High School of Commerce, directed by Janet Scott, served a delicious luncheon. Aya Nishimura, a Japanese student at Mt. Holyoke College, who appeared in native costume, spoke delightfully of Japanese home life. As the Japanese women do all their sewing by hand, sewing is, consequently, a major subject in the schools. It is begun in the third grade.

Worcester County Home Economics Association. At a dinner meeting on March 20, Alice Haley, a graduate student at Harvard and formerly of the University of Minnesota, addressed the group on "Character Building and the Home Economics Curriculum."

Framingham Normal School. Enrollment in the student home economics club this year is 102. Membership is limited to juniors and seniors. Meetings are held monthly in the "Club House," a small building on the campus. New, attractive, and useful gifts were recently given the house at a "house shower."

The club's recent "International Night" was most successful. A program of foreign music and dancing in conjunction with a bazaar was featured. Decorations of national flags and travel posters were supplemented by aides in foreign costumes. Particularly fascinating and remunerative was the table displaying foods to be found on foreign menus.

The Home Economics Club assists other campus organizations in carrying on fashion shows and teas.

MICHIGAN

Detroit Home Economics Association. That the Association is steadily growing is evident from the fact that this year women from Grosse Isle, Highland Park, Fordson, Hamtramck, and Pontiac are among its 215 members. Programs are planned to meet the varied interests of the members. The one for November included a delightful exhibition of Ukranian costumes and a program of Ukranian music by children and artists of that nationality. In December, Charles F. F. Campbell, director of the Detroit League for the Handicapped, lectured on "How the Other Half Lives," describing the social work being done in Detroit.

To keep members informed of new commercial developments of interest to home economists, special meetings were arranged so that they might hear Grace Bemis of Wrights Bias Tape Company, Clara Dannies of Lever Brothers Company, Dorothy Gatton of the Rayon Institute, and Olga Brucher of the Frigidaire Corporation.

Battle Creek College. A luncheon was recently given at the Sanatorium by the home economics faculty and dietitians in honor of Katharine Fisher, director of the Good Housekeeping Institute, who later talked to a group of home economics students of the College. Mary Barber and Mrs. Mildred Day of the Kellogg Company were also guests at the luncheon.

Mr. MacMillan of the Onondaga Pottery Company, Syracuse, recently lectured to the students on the making of china and exhibited interesting pieces.

At a clinic at Claire, Lorna Barber of the nutrition department helped to give physical examinations to 483 children. Home economics students from the College talked to each child individually about health habits. At the evening meeting for parents, Lorna Barber spoke

on "Feeding the School Child"; Professor Birkbeck, on "Health Efficiency"; and Dr. Brown, on "Physical Examinations and Immunization from Diphtheria."

Lola Schmidt of the nutrition department did graduate work at the University of Wisconsin last semester.

Central State Teachers College. Topics in a series of faculty "chic chats "for the girls at the noon hour through the winter term included "What to Wear and When" and "How to Choose My Best Color" by Mildred N. Robinson; "How to Furnish the Girl's Room" by Professor Wightman; and illustrated discussions of "The Well Appointed Dinner Table" and "Table Service and the Etiquette of Entertaining" by Rose J. Hogue. Home economics students assisted in all the programs. The large attendance has been indicative of the students' interest in the subjects.

B. J. Ford of the state department of public instruction, who visited the College recently, discussed rural consolidated schools before a group of prospective home economics teachers.

Geraldine Brode, city critic, assisted by pupils and student teachers, recently entertained the board of education at dinner. A very generous appropriation had just been made for new linen and silver for the department.

Michigan State College. Florence L. Becker, nutrition specialist, resigned her position in December to be married to Colond McCrary, who is at Augusta, in charge of the Kellogg Demonstration Farm of the College.

Farmers' Week was held at the College, beginning February 3. There was a record attendance, with approximately a thousand registered in the homemakers' section. Among the outside speakers on the homemakers' program were Dr. Helen Mitchell, Mrs. Clara Ingraham Judson, Helen Arms, and Jeanette Kelley.

Dr. Mitchell also spoke at an evening meeting of the student Home Economics Club during her stay in East Lansing.

Extension Service. At a recent conference arranged by Evelyn Turner, home management specialist, county home demonstration agents, and state specialists received up-to-date information regarding the use of electrical equipment in homes. Eloise Davison of the National Electric Light Association, Mrs. Mariqurita Dygert of the Detroit Edison Company, and Mrs. Dorothy K. Harris of the Universal Range Company discussed various phases of the subject. The rapid extension of electrical lines through the rural districts has resulted in increased expenditures for power equipment.

Secretaries of project groups in counties with home demonstration agents are being trained in the art of newswriting by Muriel Dundas, nutrition specialist, and J. F. Hasselman, director of college publications. The actual practice in writing articles for criticism is resulting in better quality and quantity in the news stories about home demonstration work throughout the state.

Mrs. Lydia Anne Lynde, child care and training specialist, reports that 68 women in her groups in Wayne and Oceana Counties have read 88 books and 223 articles from a list selected with reference to the child care project. More than five hundred members from six counties have been enrolled in the project, which includes four discussions, an afternoon meeting for mothers, and an evening session which both fathers and mothers attend.

Michigan State Normal College. At a recent meeting of the Home Economics Club, students reported on the various phases of work open to home economists.

The home economics faculty assisted the dean in giving a series of talks to the

freshman girls on "Good and Bad Taste in Many Things," which ranged from notepaper to personal conduct.

Clara Kelly of the clothing department gave a college assembly talk on "Selection of a Student's Wardrobe," using women and men of the college as "living models" to illustrate her points.

Estelle Bauch and Florence Schoenleber attended the regional vocational conference in Chicago from March 3 to 7. Mrs. Lucy Aiken Elliott attended the home economics meeting held during the National Education Association sessions at Atlantic City.

Battle Creek. Mrs. Mildred Day of the Kellogg Company recently gave two talks before the market and journalism classes at Iowa State College, Ames.

MISSISSIPPI

Mississippi Home Economics Association. The annual meeting was held April 17, 18, and 19 at the Edwards Hotel in Jackson, with "The Optimal Child" as the general theme. Important speakers were Hildegarde Kneeland, Mary Hale Martin, Miriam Birdseye, and Mrs. Frances Y. Kline.

Agricultural and Mechanical College. The home economics research department quarters in the new Experiment Building include four laboratories, three store rooms, a wash room, a balance room, four offices, and a reception room.

University of Mississippi. The new University High School offers an opportunity for trained home economics teachers from the University to find employment in the state. New courses in home management, hygiene, and bacteriology will be offered at the coming session.

Martha Jane Stuart, a graduate of the home economics department who took her master's degree at Columbia two years ago, is teaching this year in Eskridge College, Due West, South Carolina.

Mrs. Sara Slater Hammond is this year teaching advanced clothing classes. Her most interesting class is one in historic costume, in which she uses a stereopticon in connection with her lectures.

Much interest has been manifested in a course in interior design, the laboratory work of which includes such early American needlework as gros point, crewel work, and hooked rugs.

For the summer term a course in colonial and early American homes is planned in response to the general interest in these periods.

Extension Service. *Harrison County.* Following the Southern Agricultural Workers' meeting in Jackson, Mrs. Ola Powell Malcolm accompanied Mary Cresswell to Gulfport to study the excellent club market conducted by Harrison County women. While there she was honored with a Valentine luncheon at the Women's Club. The foods used were those offered for sale in the market.

Humphreys County. Fifty homes in Belzoni have entered home beautification contests. Pictures were taken of these homes before improvements were begun.

Marshall County. Mrs. Lillian Stille has done outstanding work in gardening and landscape improvement. This year 273 women had year-round gardens which were planned in accordance with a "canning budget."

Quitman County. The Home Demonstration Club women in Quitman County did valuable work in connection with the epidemic of meningitis. They set up and equipped a tent for the nurses in the stricken area and supplied them with food.

The home demonstration agent has sponsored some very effective home and public building landscaping with such native plants as dogwood, cedars, wild hydrangea, red buds and with wild ferns, mountain pinks, and other native perennials for borders, boxes, and covers.

Tallahatchie County. Fifty men and women met at Charleston on March 4 to plan a county program of work. The women made definite arrangements for carrying out a home management program over the entire county, including the section where most of the people are tenants. Wives of several plantation owners present agreed to cooperate with the home demonstration agent, Viola Phillips, in sponsoring the home demonstrations needed among their tenants. Contests will be conducted among the tenants on each plantation. All agreed that gardening and canning should be stressed.

Cedar Hill. The Cedar Hill Home Economics Club took as a project this year the redecorating of the foods laboratory. A color scheme of blue and ivory was decided upon. Work tables were painted ivory and the tops were covered with blue and cream-colored linoleum. Effective draperies of soft blue, waterproofed material were made and hung at the windows in a way not to cut out light.

Association of Southern Agricultural Workers. Many Mississippi home economists attended and profited by the programs of the home economics section of the Association during its three-day session in Jackson. Speakers of special interest to this group were Dr. Jessie Whitacre, who discussed "Research for Home Improvement"; Dr. Eric Englund, who spoke on "Burden of Farm Taxation"; Mrs. Agnes Filler, who ably handled the subject "Parental Education and Child Development"; and Sybil Smith, who discussed "Methods for Improving Research."

MONTANA

Montana State College. The annual Montana Farm and Home Week was held at the State College in Bozeman from February 3 to 8. Clothing problems received major attention, and the local people were assisted by clothing specialists from two other states, Mrs. Blanche Hyde of Colorado and Afton O'Dell of Utah. A budget style show, directed by Edith Rhyne, was a very attractive feature of the program. Claribel Nye, home demonstration leader of Oregon, and Eloise Davison of the National Electric Light Association was also on the program.

Mildred Nemeck, for the past five years director of the dormitory, resigned at Christmas and went on an enjoyable Mediterranean cruise with her parents and Elizabeth Rivers.

Dr. Jessie Richardson of the Montana Experiment Station is enjoying a leave of absence in California. While she is away, her home is being used as a home management house by the College.

Mary Alice Powers, a graduate of the College, recently resigned her position as manager of the Men's Faculty Club of Columbia University to accept one with Richards Treat in Minneapolis.

Rua Van Horn, state supervisor of home economics, called and conducted at the College in January the first conference of Montana home economics evening school teachers.

Hildegarde Kneeland of the United States Bureau of Home Economics visited Montana State College on her recent western trip.

OUR CONTRIBUTORS

JAMES S. TAYLOR, a Harvard graduate, has been associated with the Division of Building and Housing in the United States Department of Commerce since its formation in 1921, first as assistant and, since 1928, as acting chief. He has served as secretary of the Department's Advisory Committee on City Planning and Zoning and of Better Homes in America, and has written various bulletins and papers on housing and homes, being joint author with Dr. John Gries of the Department's well-known bulletin on "How to Own Your Home."

EDWIN A. LEE returned to his native state when, in 1918, he joined the faculty of the University of California where he is now professor of education and director of the division of vocational education. He holds the bachelor's, master's, and doctor's degrees from Columbia University. He was the first president of the American Vocational Association, is editor for the vocational textbooks published by the McGraw-Hill Book Company, and is a member of the White House Conference on Child Health and Protection.

L. THOMAS HOPKINS is perhaps best known to home economists as co-author with Mrs. Kate W. Kinyon of "Junior Home Problems" and "Junior Food and Clothing." His technical training was gained at Tufts College, Columbia University, and the Harvard Graduate School of Education. At Columbia University, he now fills the dual rôle of associate professor of education at Teachers College, and curriculum specialist at the Lincoln School, where he passes upon the instructional curriculum and builds up a research organization for developing a new curriculum from kindergarten to junior college.

SYBIL L. SMITH is a graduate of Smith College, who later assisted Dr. H. C. Sherman at Columbia University and was co-author with him of "The Vitamins." In the Office of Experiment Stations of the United States Department of Agriculture, she has the double task of preparing abstracts of the literature of human nutrition for the *Experiment Station Record* and of representing the Office in its supervision of research projects in home economics which the land-grant colleges carry on under federal funds. To readers of the JOURNAL, she has long been known both as abstractor in nutrition and as the contributor of various summaries similar to the present one.

JESSIE W. HARRIS spent most of her childhood in Georgia before going to the University of Tennessee. Her professional work has included that of state supervisor of vocational home economics in Texas, and she is now head of the home economics department at the University of Tennessee.

GRACE M. AUGUSTINE is intructor in household arts (institution management) at Teachers College, Columbia University, from which institution she has recently received her M. A. For six years she served as dietetian-housekeeper at New York Orthopaedic Dispensary and hospital. With Mrs. Mary de Garmo Bryan, she provides the JOURNAL with its abstracts in institution management.

MRS. EDITH ELMER WOOD is well-known as an authority in the sociological aspects of housing, on which she has written various articles and books, including "Housing Progress in Western Europe." She is a graduate of Smith College with a Ph.D. from Columbia, the wife of a naval officer, and, incidentally, the founder and honorary president of the Anti-Tuberculosis League of Porto Rico.

PAUL V. BETTERS. After graduation from the University of Minnesota, Mr. Betters studied and taught at Syracuse University. He has also studied at the New York Bureau of Municipal Research, has done research for several commissions studying special problems of government, and has contributed to periodicals in that field. His present article is a by-product of his work on a monograph on the Bureau of Home Economics, which he is preparing for the series issued by the Institute of Government Research of the Brookings Institution.

MRS. MARY KOLL HEINER returned to her alma mater, the University of Chicago, as instructor in 1919, after teaching home economics in Missouri and Oregon. While at Corvallis she began time studies and job analyses of household tasks. In 1921 she married and established a home "to prove it," and two years later enlarged the demonstration by introducing an offspring. Between whiles she manages to write for *Hygeia* and women's magazines. N. MAUDE VEDDER, her associate in the present study, is a Kansan whose thirst for knowledge sent her to four institutions for five summers, ending at the University of Chicago where the work here described was the subject of her master's thesis. She is now associate professor at Pennsylvania State College.